RECORD OF COMMUNICATION

REGIONAL SAMPLE CONTROL CENTER

RECEIVED
JUL 22 1999

DATE: JULY 15, 1999
SUBJECT: CLP Data Package for Quality Assurance Review
FROM: RSCC / ESAT
TO: George Karras, Hazardous Waste Support Section

Attached is the following ORGANIC Data Package to be reviewed for Quality Assurance

SITE	CORNELL-DUBILIER	CASE#	27133 / SDG # BWZ67
CONTRACTOR	STARTW	#SAMPLES	MATRIX
PHASE	SI	20	SOIL
LAB	SWOK		
TURN-AROUND-TIME	14 DAYS	FRACTION	PCBs
CERCLIS ID #	NJD981557879	SITE SPILL #	GZ

REGION II RSCC DATA TRANSFER LOG

Relinquished By		Received By	
Signature	Date/Time	Signature	Date/Time
		John Barlicky	7-14-99
John Barlicky	7-15-99	Mark Jack	7-19-99
Mark Jack	7-21-99	John Barlicky (DCR)	7-21-99
John Barlicky (DCR)	7/21/99	K Fayer	7/21/99
K Fayer	7/22/99		

(over for instructions) revised 3/99

231777

RECORD OF COMMUNICATION

TO: Mike MAHNKOPS

FROM: *JANET TROTTER*
Region II ESAT/RSCC

DATE: July 23, 1999

SUBJECT: QUALITY ASSURED DATA

MESSAGE Organic

PLEASE SIGN BELOW IN ACKNOWLEDGEMENT OF RECEIPT OF THE FOLLOWING AND RETURN ONE COPY OF THIS RECORD OF COMMUNICATION TO THE RSCC-REGION II.

(1) Cornell Dubilier 27133 SWOK SDG# BWZ67 20 soil
(2) Cornell Dubilier 27133 SWOK SDG# BWZ48 20 soil

REPLY BY: _____

SIGNATURE: _____ DATE: _____

DATE RECEIVED BY RSCC: ____/____/____

cc: EPA TASK MONITOR
ESAT, MANAGER
file

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 27133 SDG No.: BWZ67
LABORATORY: SWOK SITE: Cornell Dubilier

DATA ASSESSMENT

The current SOP HW-6 (Revision 11) June 1996, USEPA Region II Data Validation SOP for Statement of Work OLMO 3.2 for evaluating organic data have been applied.

All data are valid and acceptable except those analytes rejected "R"(unusable). Due to the detection of QC problems, some analytes may have the "J" (estimated), "N"(presumptive evidence for the presence of the material, "U" (non-detect) or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's
Signature: Mark Zambrowski Date: July 21, 1999

Verified By: _____ Date: ____/____/199__

CLP DATA ASSESSMENT

SDG 1, BWZ67: PCB ONLY

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.
PCB: The following samples were qualified "J" for hits and "UJ" for non-detects due to the sample exceeding % moisture criteria: BWZ80, BWZ80DL, BWZ82, BWZ82DL, BWZ86, BWZ86DL, BWZ87, and BWZ87DL.

2. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.
PCB: No problems.

3. LABORATORY CONTROL SAMPLE (LCS):

The LCS data is generated from a laboratory quality control sample. LCS data is intended to assess the ability of the contractor to perform the analytical method.
PCB: No problems.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank

Percent Moisture Report

SDG NO: **BWZ67**
CASE NO: **27133**

LABORATORY: **SWL-TULSA**
AGENCY INPUT FILE: **BWZ67.ASF**

PERCENT MOISTURE LIMITS

	Primary	Expanded
PES	50%	90%

DC-184: Percent moisture content of the following pesticide soil samples exceeds primary criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

BWZ80, BWZ80DL, BWZ82, BWZ82DL, BWZ86, BWZ86DL
BWZ87, BWZ87DL

CLP DATA ASSESSMENT

contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:
PCB: No problems.

B) Field or rinse blank contamination:
PCB: No problems.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".
PCB: No problems.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 in both initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected "R".

B) Percent Relative Standard Deviation (%RSD) and Percent

CLP DATA ASSESSMENT

Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and %D must be < ±30% (VOA) or ±25% (BNA). A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

PCB: No problems.

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction.

PCB: No problems.

9. COMPOUND IDENTIFICATION:

Quantitation Limit Report

SDG NO: **BWZ67** LABORATORY: **SWL-TULSA**

CASE NO: **27133** AGENCY INPUT FILE: **BWZ67.ASF**

CONTRACT REQUIRED SAMPLE QUANTITY

	Water	Low Soil	Med Soil
PES	1000.0 (ML)	30.0 (G)	

DC-158: The following pesticide samples have analyte concentrations below the quantitation limit (CRQL). All results below the CRQL are qualified "J".

BWZ67
Heptachlor epoxide, Endosulfan II, Methoxychlor

BWZ67DL
Dieldrin, 4,4'-DDE, Endosulfan sulfate, Endrin aldehyde

BWZ67MS
gamma-BHC (Lindane), Heptachlor, Aldrin, Methoxychlor

BWZ67MSD
gamma-BHC (Lindane), Heptachlor, Aldrin, Endosulfan II
Methoxychlor

BWZ69
Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ69DL
Dieldrin, Endosulfan sulfate, Endrin aldehyde, alpha-Chlordane

BWZ70
Endosulfan II, 4,4'-DDD, 4,4'-DDT, Endrin aldehyde

BWZ70DL
J
alpha-Chlordane, gamma-Chlordane, Aroclor-1254

BWZ71
Heptachlor epoxide, Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ71DL
Dieldrin, 4,4'-DDE, Endosulfan sulfate, Endrin aldehyde

BWZ72
Endosulfan II, 4,4'-DDD, 4,4'-DDT, Methoxychlor
Endrin aldehyde

BWZ72DL
Dieldrin, Endrin aldehyde, alpha-Chlordane

BWZ73
Heptachlor epoxide, Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ73DL
Dieldrin, 4,4'-DDE, Endosulfan sulfate, Endrin aldehyde

BWZ74DL
Endosulfan I, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ75
Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ75DL
Heptachlor epoxide, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate, Endrin aldehyde

BWZ76
Methoxychlor

BWZ76DL
Heptachlor epoxide, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate, Endrin aldehyde

BWZ77
Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ77DL
Dieldrin, 4,4'-DDE, Endrin, Endosulfan sulfate
Endrin aldehyde

BWZ78
Heptachlor epoxide, Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ78DL
Heptachlor epoxide, Endosulfan I, Dieldrin, 4,4'-DDE
Endrin, Endosulfan sulfate, 4,4'-DDT, Endrin aldehyde
gamma-Chlordane

BWZ79
Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ79DL
Endosulfan I, Dieldrin, 4,4'-DDE, Endrin

Endosulfan sulfate, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ80
Endosulfan II, 4,4'-DDD, 4,4'-DDT, Methoxychlor
Endrin aldehyde

BWZ80DL
Endosulfan I, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane
Aroclor-1254
J

BWZ81
Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ81DL
Endosulfan I, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ82
Endosulfan II, 4,4'-DDD, 4,4'-DDT, Methoxychlor
Endrin aldehyde

BWZ82DL
Endosulfan I, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane
Aroclor-1254
J

BWZ83
Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ83DL
Heptachlor epoxide, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate, Endrin aldehyde

BWZ85
Endosulfan I, Endrin aldehyde

BWZ85DL
Heptachlor epoxide, Dieldrin, 4,4'-DDE, Endrin
alpha-Chlordane, gamma-Chlordane

BWZ86
Endrin, Endosulfan II, 4,4'-DDD, Endrin aldehyde

BWZ86DL
Heptachlor epoxide, Dieldrin, 4,4'-DDE, alpha-Chlordane
gamma-Chlordane, Aroclor-1254
J

BWZ87
Endrin, Endosulfan II, 4,4'-DDD, Endrin aldehyde

BWZ87DL
Heptachlor epoxide, Dieldrin, 4,4'-DDE, alpha-Chlordane
gamma-Chlordane, Aroclor-1254

BWZ88DL
Heptachlor epoxide, Dieldrin, 4,4'-DDE, gamma-Chlordane

PBLKSI
Heptachlor, gamma-Chlordane

DC-422: The following pesticide samples have analytes for which the percent difference between column results exceeds primary criteria. Hits > CRQL are flagged "J." Or: if %D is > 50% and value is < CRQL, sample result is elevated to the CRQL and qualified "U."

BWZ67
Endosulfan sulfate, Methoxychlor

BWZ67MS
Endrin

BWZ67MSD
Endrin, Methoxychlor

BWZ69DL
Endosulfan sulfate

BWZ73DL
4,4'-DDE

BWZ74DL
4,4'-DDE, Endosulfan sulfate, alpha-Chlordane

BWZ75
Endosulfan sulfate

BWZ75DL
Endosulfan sulfate, gamma-Chlordane

BWZ76
Endosulfan sulfate

BWZ76DL
4,4'-DDE, Endosulfan sulfate, gamma-Chlordane

BWZ77DL
Endosulfan I, Endosulfan sulfate

BWZ78DL
Dieldrin, Endrin, Endosulfan sulfate, Endrin aldehyde

BWZ79DL
Dieldrin, Endosulfan sulfate, gamma-Chlordane

BWZ80
Endrin

BWZ80DL
Endrin aldehyde, gamma-Chlordane, Aroclor-1254

BWZ81DL
Endosulfan sulfate, gamma-Chlordane

BWZ82
4,4'-DDD, gamma-Chlordane

BWZ83
Methoxychlor

BWZ83DL
Endosulfan sulfate, gamma-Chlordane

BWZ85
Dieldrin, 4,4'-DDE, 4,4'-DDT, Endrin aldehyde
Aroclor-1254

BWZ85DL
alpha-Chlordane

BWZ86
Dieldrin, 4,4'-DDE, Endrin aldehyde

BWZ86DL
4,4'-DDE, alpha-Chlordane

BWZ87
Dieldrin, 4,4'-DDE, 4,4'-DDT, Endrin aldehyde

BWZ87DL
4,4'-DDE, alpha-Chlordane

BWZ88
Dieldrin, 4,4'-DDE, 4,4'-DDT, Endrin aldehyde
gamma-Chlordane, Aroclor-1254

PBLKSI
Heptachlor

DC-423: The following pesticide samples have analytes for which the percent difference between column results exceeds expanded criteria. Hits > CRQL are flagged "NJ;" or "R" when %D > 100; or "NJ" when %D is between 100 - 200 (interference detected). Hits < CRQL are elevated to the CRQL and qualified "U."

BWZ67
Heptachlor epoxide, Dieldrin, Endosulfan II, 4,4'-DDD
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ67DL
Dieldrin, 4,4'-DDE, Endosulfan sulfate, gamma-Chlordane

BWZ67MS
gamma-BHC (Lindane), Heptachlor, Aldrin, Dieldrin
Endosulfan II, 4,4'-DDD, 4,4'-DDT, Methoxychlor
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ67MSD
gamma-BHC (Lindane), Heptachlor, Aldrin, Dieldrin
Endosulfan II, 4,4'-DDD, 4,4'-DDT, Endrin aldehyde
alpha-Chlordane, gamma-Chlordane

BWZ69
Dieldrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Methoxychlor, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ69DL
Dieldrin, Endrin aldehyde, gamma-Chlordane

BWZ70
Dieldrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ70DL
gamma-Chlordane

BWZ71

Heptachlor epoxide, Dieldrin, Endosulfan II, 4,4'-DDD
4,4'-DDT, Methoxychlor, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ71DL

4,4'-DDE, Endosulfan sulfate, Endrin aldehyde, gamma-Chlordane

BWZ72

Dieldrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Methoxychlor, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ72DL

Dieldrin, Endrin aldehyde, gamma-Chlordane

BWZ73

Heptachlor epoxide, Dieldrin, Endosulfan II, 4,4'-DDD
4,4'-DDT, Methoxychlor, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ73DL

Dieldrin, Endosulfan sulfate, Endrin aldehyde, gamma-Chlordane

BWZ74

Endrin, Endosulfan sulfate, 4,4'-DDT, Endrin aldehyde
alpha-Chlordane, gamma-Chlordane

BWZ74DL

Endrin, Endrin aldehyde, gamma-Chlordane

BWZ75

Endrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ75DL

Heptachlor epoxide, 4,4'-DDE, Endrin, Endrin aldehyde

BWZ76

Endrin, 4,4'-DDT, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ76DL

Heptachlor epoxide, Endrin, Endrin aldehyde

BWZ77

Endosulfan I, Endrin, Endosulfan II, 4,4'-DDD

4,4'-DDT, Methoxychlor, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ77DL
4,4'-DDE, Endrin, Endrin aldehyde, gamma-Chlordane

BWZ78
Heptachlor epoxide, Endosulfan I, Endosulfan II, 4,4'-DDD
4,4'-DDT, Methoxychlor, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ78DL
Endosulfan I, 4,4'-DDT

BWZ79
Endrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ79DL
4,4'-DDE, Endrin, Endrin aldehyde

BWZ80
Endosulfan I, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ80DL
Endosulfan I, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate

BWZ81
Endrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ81DL
4,4'-DDE, Endrin, Endrin aldehyde

BWZ82
Endosulfan I, Endosulfan II, 4,4'-DDT, Endrin aldehyde
alpha-Chlordane

BWZ82DL
Endosulfan I, Endrin, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ83
Endrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ83DL

Heptachlor epoxide, 4,4'-DDE, Endrin, Endrin aldehyde

BWZ85

Heptachlor epoxide, Endosulfan I, alpha-Chlordane, gamma-Chlordane

BWZ85DL

Heptachlor epoxide, Dieldrin, Endrin, gamma-Chlordane

BWZ86

Heptachlor epoxide, Endosulfan II, 4,4'-DDD, alpha-Chlordane

BWZ86DL

Heptachlor epoxide, Dieldrin, gamma-Chlordane

BWZ87

Heptachlor epoxide, Endosulfan II, 4,4'-DDD, alpha-Chlordane

BWZ87DL

Heptachlor epoxide, Dieldrin, gamma-Chlordane

BWZ88

Heptachlor epoxide, Endosulfan I, Endosulfan II, alpha-Chlordane

BWZ88DL

Heptachlor epoxide, Dieldrin, gamma-Chlordane

PBLKSI

gamma-Chlordane

CLP DATA ASSESSMENT

A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ng/ml in the final sample extract.
PCB: The following sample was qualified "J" for Aroclor 1254 due to exceeding % D criteria of 50% between columns: BWZ88.

10. CONTRACT PROBLEMS NON-COMPLIANCE:

PCB: The following diluted samples were not required since the reported analytes in the orginal samples did not exceed the initial calibration high point standards as required by the SOW, D-59/Pest10.2.3.2 and 10.2.3.3: BWZ69DL, BWZ70DL, BWZ72DL, BWZ78DL, BWZ79DL, BWZ80DL, BWZ81DL, BWZ82DL, BWZ85DL, BWZ86DL, and BWZ87DL.

11. FIELD DOCUMENTATION:

12. OTHER PROBLEMS:

PCB: Do not use pages 623 and 624, these two pages are duplicates of PEM6K. PEM6K was corrected for the original integration of endrin ketone on the quantitation report and the chromatograms.

The quantitation report for INDBL6D did not have a page number. This page is located between 641 and 642.

13. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified not to be used.

PCB: BWZ67DL, BWZ69DL, BWZ70DL, BWZ71DL, BWZ72DL, BWZ73DL,

CLP DATA ASSESSMENT

BWZ74DL, BWZ75DL, BWZ76DL, BWZ77DL, BWZ78DL, BWZ79DL, BWZ80DL, BWZ81DL, BWZ82DL, BWZ83DL, BWZ85DL, BWZ86DL, BWZ87DL, and BWZ88DL.

Holding Time Report

SDG NO: **BWZ67**
CASE NO: **27133**

LABORATORY: **SWL-TULSA**
AGENCY INPUT FILE: **BWZ67.ASF**

HOLDING TIME CRITERIA

Pesticide

	--- Extraction ---		---- Analysis ----	
	Primary	Expanded	Primary	Expanded
Water	7	28	40	60
Soil	7	28	40	60

No problems found for this qualification.

SDG NO: BWZ67
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ67.ASF

SMC/SURROGATE CRITERIA

Pesticide

Percent Recovery Limits

	--- Water ---		---- Soil ---	
	Lower	Upper	Lower	Upper
Tetrachloro-m-xylene	30.0	150.0	30.0	150.0
Decachlorobiphenyl	30.0	150.0	30.0	150.0

DC-174: The following pesticide samples have surrogate percent recoveries which exceed the upper limit of the criteria window.
If %R for both surrogates on both columns are > contract limit, hits are flagged "J".

BWZ67, BWZ67DL, BWZ67MS, BWZ67MSD, BWZ69, BWZ69DL
BWZ70, BWZ71, BWZ71DL, BWZ72, BWZ72DL, BWZ73
BWZ73DL, BWZ74, BWZ74DL, BWZ75, BWZ75DL, BWZ76
BWZ76DL, BWZ77, BWZ77DL, BWZ78, BWZ78DL, BWZ79
BWZ79DL, BWZ80, BWZ80DL, BWZ81, BWZ81DL, BWZ82
BWZ82DL, BWZ83, BWZ83DL, BWZ85, BWZ85DL, BWZ86
BWZ86DL, BWZ87, BWZ87DL, BWZ88

DC-176: The following diluted pesticide samples have surrogate percent recoveries of less than 10%. Professional judgement is recommended.
Hits and non-detects are not flagged.

BWZ67DL, BWZ69DL, BWZ70DL, BWZ71DL, BWZ72DL, BWZ73DL
BWZ74DL, BWZ75DL, BWZ76DL, BWZ77DL, BWZ78DL, BWZ79DL
BWZ80DL, BWZ81DL, BWZ82DL, BWZ83DL, BWZ88DL

DC-178: The following pesticide samples are not fully qualified for surrogate RT because of missing RT information. Visual inspection of the data is required. Samples with surrogates falling outside the RT window should be qualified based on professional judgement.

BWZ67DL, BWZ69DL, BWZ70DL, BWZ71DL, BWZ72DL, BWZ73DL
BWZ74DL, BWZ75DL, BWZ76DL, BWZ77DL, BWZ78DL, BWZ79DL
BWZ80DL, BWZ81DL, BWZ82DL, BWZ83DL, BWZ88DL

Matrix Spike Report

SDG NO: **BWZ67** LABORATORY: **SWL-TULSA**

CASE NO: **27133** AGENCY INPUT FILE: **BWZ67.ASF**

MATRIX SPIKE CRITERIA

Pesticide

Percent Recovery Limits & RPD

	Water			Soil		
	Lower	Upper	RPD	Lower	Upper	RPD
gamma-BHC (Lindane)	56.0	123.0	15.0	46.0	127.0	50.0
Heptachlor	40.0	131.0	20.0	35.0	130.0	31.0
Aldrin	40.0	120.0	22.0	34.0	132.0	43.0
Dieldrin	52.0	126.0	18.0	31.0	134.0	38.0
Endrin	56.0	121.0	21.0	42.0	139.0	45.0
4,4'-DDT	38.0	127.0	27.0	23.0	134.0	50.0

DC-170: The following pesticide matrix spike/matrix spike duplicate samples have percent recovery outside criteria. Use professional judgement to qualify the data.

BWZ67MS

gamma-BHC (Lindane), Dieldrin, Endrin, 4,4'-DDT

BWZ67MSD

gamma-BHC (Lindane), Dieldrin, Endrin, 4,4'-DDT

LABORATORY BLANKS CRITERIA

Pesticide

Method Blank Contamination Threshold Multipliers

	First	Expanded
All compounds	5.00	5.00

DC-236: The following pesticide samples have analyte concentrations reported below the CRQL and less than or equal to five times (5X) the associated method blank concentration. Reported sample concentrations are elevated to the CRQL and qualified "U."

BWZ85DL
gamma-Chlordane

BWZ86DL
gamma-Chlordane

BWZ87DL
gamma-Chlordane

BWZ88DL
gamma-Chlordane

SDG NO: BWZ67 LABORATORY: SWL-TULSA
CASE NO: 27133 AGENCY INPUT FILE: BWZ67.ASF

CALIBRATION CRITERIA

Pesticide

Maximum %RSD (initial calibration)	- TCL analytes	20
	- surrogates	30
Maximum RPD (continuing calibration)		25
INDA/INDB percent resolution		90
Continuing calibration sequence time		12

DC-195: The RPD between the nominal and the calculated amount of an analyte in the midpoint INDA/INDB exceeded criteria. Hits are qualified "J" and non-detects are qualified "UJ".

BWZ85
delta-BHC

BWZ85DL
delta-BHC

BWZ86
delta-BHC

BWZ86DL
delta-BHC

BWZ87
delta-BHC

BWZ87DL
delta-BHC

BWZ88
delta-BHC

BWZ88DL
delta-BHC

PBLKSI
delta-BHC

DC-197: The following pesticide samples are not qualified because of missing calibration verification information. Visual inspection of the data is required.

BWZ67, BWZ67DL, BWZ67MS, BWZ67MSD, BWZ69, BWZ69DL
BWZ70, BWZ70DL, BWZ71, BWZ71DL, BWZ72, BWZ72DL
BWZ73, BWZ73DL, BWZ74, BWZ74DL, BWZ75, BWZ75DL
BWZ76, BWZ76DL, BWZ77, BWZ77DL, BWZ78, BWZ78DL
BWZ79, BWZ79DL, BWZ80, BWZ80DL, BWZ81, BWZ81DL
BWZ82, BWZ82DL, BWZ83, BWZ83DL, BWZ85, BWZ85DL
BWZ86, BWZ86DL, BWZ87, BWZ87DL, BWZ88, BWZ88DL
PBLKSH, PBLKSI, PBLKSJ

SDG NO: **BWZ67**
CASE NO: **27133**

LABORATORY: **SWL-TULSA**
AGENCY INPUT FILE: **BWZ67.ASF**

SYSTEM PERFORMANCE CRITERIA

Resolution & Breakdown Limits

RESC percent resolution	60.00
PEM percent resolution	90.00
4,4'-DDT percent breakdown	20.00
Endrin percent breakdown	20.00
Combined percent breakdown	30.00

DC-215: The following pesticide samples are associated with a continuing PEM in which the RPD between the nominal and calculated amounts for a PEM compound is outside criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

BWZ67
4,4'-DDT, Methoxychlor

BWZ67MS
4,4'-DDT, Methoxychlor

BWZ67MSD
4,4'-DDT, Methoxychlor

BWZ69
4,4'-DDT, Methoxychlor

BWZ70
4,4'-DDT, Methoxychlor

BWZ71
4,4'-DDT, Methoxychlor

BWZ72
4,4'-DDT, Methoxychlor

BWZ73
4,4'-DDT, Methoxychlor

BWZ74
4,4'-DDT, Methoxychlor

BWZ75
4,4'-DDT, Methoxychlor

BWZ76
4,4'-DDT, Methoxychlor

BWZ77
4,4'-DDT, Methoxychlor

BWZ78
4,4'-DDT, Methoxychlor

BWZ79
4,4'-DDT, Methoxychlor

BWZ80
4,4'-DDT, Methoxychlor

BWZ81
4,4'-DDT, Methoxychlor

BWZ82
4,4'-DDT, Methoxychlor

BWZ83
4,4'-DDT, Methoxychlor

BWZ85
beta-BHC, 4,4'-DDT, Methoxychlor

BWZ86
beta-BHC, 4,4'-DDT, Methoxychlor

BWZ87
beta-BHC, 4,4'-DDT, Methoxychlor

BWZ88
beta-BHC, 4,4'-DDT, Methoxychlor

DC-226: The following pesticide samples are associated with a continuing PEM in which the DDT % breakdown exceeds criteria. DDT detected in associated samples is qualified "J".

BWZ67MS, BWZ67MSD, BWZ69, BWZ70, BWZ71, BWZ72
BWZ73, BWZ74, BWZ75, BWZ76, BWZ77, BWZ78
BWZ79, BWZ80, BWZ81, BWZ82, BWZ83, BWZ85
BWZ86, BWZ87, BWZ88

DC-227: The following pesticide samples are associated with a continuing

PEM in which the DDT % breakdown exceeds criteria. DDD and/or DDE was detected in the sample, but DDT was not detected. Non-detect DDT in associated samples is qualified "R".

BWZ67

DC-228: The following pesticide samples are associated with a continuing PEM in which the DDT % breakdown exceeds criteria. DDD and DDE detected in associated samples are qualified "NJ".

BWZ67MS, BWZ67MSD, BWZ69, BWZ70, BWZ71, BWZ72
BWZ73, BWZ74, BWZ75, BWZ76, BWZ77, BWZ78
BWZ79, BWZ80, BWZ81, BWZ82, BWZ83, BWZ85
BWZ86, BWZ87, BWZ88

DPO: []ACTION []FYI REGION__2_

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO._27133__ LABORATORY_SWOK_____

SDG NO. BWZ67 _ DATA USER___EPA/Region II_____

SOW_OLMO 3.2 _____ REVIEW COMPLETION DATE_7/21/99___

NO. OF SAMPLES_____WATER ____20___SOIL _____OTHER

REVIEWER: [] ESD [x] ESAT [] OTHER, CONTRACTOR_____

QC ITEM	VOA	BNA	PEST		
HOLDING TIMES			M		
GC-MS PERFORMANCE			O		
INITIAL CALIBRATIONS			O		
CONTINUING CALIBRATIONS			O		
FIELD BLANKS(F = N/A)			O		
LABORATORY BLANKS			O		
SURROGATES			O		
MATRIX SPIKE/DUPLICATES			O		
QC SAMPLES(LCS, PVS)			O		
INTERNAL STANDARDS			F		
COMPOUND IDENTIFICATION			X		
COMPOUND QUANTITATION			X		
SYSTEM PERFORMANCE			O		
OVERALL ASSESSMENT			M		

O = No problems or minor problems that do not affect data usability.
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as either estimated or unusable.
Z = More than about 5% of the data points are qualified as unusable.

DATA REJECTION SUMMARY

Type of Review: Organic Date: 7/21/99 Case No.27133, SDG# BWZ67

Site Name: Cornell-Dubilier Lab Name: SWOK Reviewer's Initials: MZ

Number of Samples: H_2O, 20 soils, +QC + reanalyses/dilutions

Analytes Rejected Due To Exceeding Review Criteria For:

No. of Compounds/No. of Fractions(Samples)

	Surrogates	Holding Times	Calibrat-ion	Contam-ination	ID	Internal Standards	Other	Total # Samples	Total # Rejected/ Total # in All Samples
VOA(41)	0	0	0	0	0	0	0	0	NA
ACID(14)	0	0	0	0	0	0	0	0	NA
B/N(45)	0	0	0	0	0	0	0	0	NA
PEST(21)	0	0	0	0	0	0	0	0	NA
PCB(7)	0	0	0	0	0	0	0	45	0/315 = 0%

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITIERIA.

Analytes Estimated Due To Exceeding Review Criteria For:

No. of Compounds/No. of Fractions(Samples)

	Surrogates	Holding Times	Calibrat-ion	Contam-ination	ID	Internal Standards	Other	Total # Samples	Total # estimated/ Total # in All Samples
VOA(41)	0	0	0	0	0	0	0	0	NA
ACID(14)	0	0	0	0	0	0	0	0	NA
B/N(45)	0	0	0	0	0	0	0	0	NA
PEST(21)	0	0	0	0	0	0	0	0	NA
PCB(7)	0	56	0	0	1	0	1	45	58/315 = 18%

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITIERIA.

YES NO N/A

NOTE: Single-peak pesticide results can be checked for rough agreement between quantitative results obtained on the two GC columns. Use professional judgement to decide whether a large discrepancy indicates the presence of an interfering compound. If an interfering compound is visible on the chromatogram, the lower of the two values should be reported and qualified as presumptively present at an approximated quantity "JN". This necessitates a determination of an estimated concentration on the confirmation column. The narrative should indicate that the presence of interferences has interfered with the evaluation of the second column confirmation.

12.2 Are the CRQLs adjusted to reflect sample dilutions? ✓ ___ ___

ACTION: If large errors exist, take action as specified in section 3.6 above.

ACTION: When a sample is analyzed at more than one dilution, the lowest CRQLs are used (unless a QC exceedance dictates the use of the higher CRQLs from the diluted sample). Replace concentrations which exceed the calibration range in the original analysis by crossing out the "E" value on the original Form I and substituting it with the result from the diluted sample. Specify which Form I is to be used, then draw a red "X" across the entire page of all Form I's that should not be used, including those in the data summary package.

ACTION: Quantitation limits affected by large, off-scale peaks should be qualified as unusable (R). If the interference is on-scale, the reviewer may offer an approximated quantitation limit (UJ) for each affected compound.

NOTE: If a sample required greater than a 10 times dilution, then a 10 times more concentrated analysis must also be performed and submitted (see SOW, page D-60/PEST, section 10.2.3.5).

ACTION: If a more concentrated analysis is unavailable, document in the Contract Problems/Non-Compliance section of the Data Assessment. Use professional judgement to qualify non-detects and positive hits below the CRQL.

	YES	NO	N/A
c. Blanks?	✓		
d. Instrument Blanks (per column & analysis)?	✓		
11.2 Are the Pest chromatograms and quant. reports included in the sample data package for each of the following:-			
a. Samples and/or fractions as appropriate?	✓		
b. Matrix spikes and matrix spike duplicates?	✓		
c. Blanks?	✓		
d. Instrument Blanks (per column & analysis)?	✓		

ACTION: If any data are missing, take action specified in 3.2 above.

11.3 Are the calibration factors shown in the quant. reports?		✓	
11.4 Is chromatographic performance acceptable with respect to:			
a. Baseline stability?	✓		
b. Resolution?	✓		
c. Peak shape?	✓		
d. Full-scale graph attenuation?	✓		
e. Other: _____?	✓		✓
11.5 Were any electropositive displacement (negative peaks) or unusual peaks seen?		✓	

ACTION: Use professional judgement to determine the acceptability of the data. Address comments under System Performance section of the Data Assessment.

12.0 Compound Quantitation and Reported Detection Limits

12.1 Are there any transcription/calculation errors in Form I results? Check at least two positive results. Were any errors found?		✓	

YES NO N/

% Difference	Qualifier
0 - 25%	None
25 - 70%	"J"
70 - 100%	"JN"
> 100%	"R"
100 - 200% (Interference detected)*	"JN"
> 50% (Pesticide value is < CRQL)**	"U"

* When the reported %D is 100 - 200%, but interference is detected on either column, qualify the data with "J".

** When the reported pesticide value is lower than the CRQL, and the %D is > 50%, raise the value to the CRQL and qualify "U", undetected.

NOTE: For Aroclors, if the %D is > 50%, but the pattern of GC peaks on both columns indicates a specific Aroclor is present, qualify that Aroclor "J".

NOTE: The lower of the two values is reported on Form I. If using professional judgement, the reviewer determines that the higher result was more acceptable, the reviewer should replace the value and indicate the reason for the change in the Data Assessment.

10.6 Check chromatograms for false negatives, especially the multiple-peak compounds (Toxaphene and the PCBs). Were there any false negatives? ___ [✓] ___

ACTION: Use professional judgement to decide if the compound should be reported. If the appropriate PCB standards were not analyzed within 72 hrs. of the sample(s) in question, qualify the data unusable "R".

Also note in Data Assessment under Contract Problems/Non-Compliance if the lab failed to analyze Aroclor standards when required.

11.0 Target Compound List (TCL) Analytes

11.1 Are the Organic Analysis Data Sheets (Form I Pest) present with required header information on each page, for each of the following:

a. Samples and/or fractions as appropriate? [✓] ___ ___

b. Matrix spikes and matrix spike duplicates? [✓] ___ ___

	YES	NO	N/A
10.2 Are all sample chromatograms properly scaled, attenuated, etc. as required for proper identification of single and multi-component analytes? (Refer to SOW sections 11.3.7.1 thru 11.3.7.8, page D-70/Pest for specific details.)	✓		

NOTE: Proper verification of Pest/PCB results depends on clear, legible presentation of the raw data. Single component pesticides and all peaks chosen for quantitation of multi-component analytes must appear at less than full scale. Toxaphene and PCB patterns must be clearly visible to enable comparison with standard chromatograms.

ACTION: If retention times or apex of peaks cannot be verified, or if multi-component peak patterns cannot be discerned, contact the WAM to obtain rescaled chromatograms from the lab.

	YES	NO	N/A
10.3 Are there any transcription/calculation errors between raw data and Forms 10A and 10B?		✓	

ACTION: If large errors exist, take action as specified in section 3.6 above.

	YES	NO	N/A
10.4 Are RTs of sample compounds within the established RT windows for analyses on both columns?	✓		
Was GC/MS confirmation provided when required (when compound concentration is > 10 ug/mℓ in the final extract)?			✓

ACTION: Use professional judgement to qualify positive results which were not confirmed by GC/MS analysis. Qualify as unusable (R) all positive results which were not confirmed on a second GC column. Also qualify as unusable (R) all positive results which do not meet RT window criteria, unless associated standard compounds are similarly biased. Use professional judgement to assign an appropriate quantitation limit.

	YES	NO	N/A
10.5 Is the percent difference (%D) calculated for the positive sample results on both columns > 25.0%?	✓		

ACTION: If the reviewer finds neither column shows interference for the positive hits, the data should be flagged as follows:

	YES	NO	N/A
9.3 If GPC Cleanup was performed (mandatory for all soil sample extracts), is Form IX Pest-2 present?	✓		
Are all soil samples listed on Form IX Pest-2?	✓		

ACTION: If no, take action specified in 3.2 above. If data suggests GPC clean-up was not performed when required, document in the Data Assessment under the Contract Problems/Non-Compliance section and Organic Regional Data Assessment Summary.

Are the %REC values for all pesticides in the GPC calibration solution between 80 - 110%?	✓		

ACTION: Qualify only those analytes which failed the recovery criteria as follows:

If %REC are < 80%, qualify positive results "J" and non-detects "UJ".

If any pesticide %REC was zero, flag non-detects "R" for that compound.

Use professional judgement to qualify positive results if any recoveries are > 110%.

NOTE: An Aroclor mixture containing Aroclors 1016 and 1260 is also analyzed during GPC calibration; however, Aroclor data is not listed on Form IX PEST-2. The raw GPC data for Aroclors 1016/1260 must be evaluated for pattern similarity with previously analyzed Aroclor standards.

9.4 The validator should verify that the correct identification scheme for the EPA Blank samples were used. See page B-35, sec. 3.3.7.8 and 3.3.7.9 of the SOW for further information.

Was the correct identification scheme used for GPC and Florisil blanks?	✓		

10.0 Pesticide/PCB Identification

10.1 Is Form X complete for every sample in which a pesticide or PCB was detected?	✓		

ACTION: If no, take action specified in 3.2 above.

	YES	NO	N/A
sample and within a valid 12 hour sequence?	✓		

NOTE: This additional standard is for identification purposes only. Positive results for Aroclors and Toxaphene are quantitated from the initial calibration.

ACTION: If no, document in the Data Assessment under Contract Problems/Non-Compliance and on the Organic Regional Data Assessment Summary form.

9.0 Cleanup Efficiency Verification (Form IX)

	YES	NO	N/A
9.1 Is Form IX PEST-1 present and complete for each lot of Florisil Cartridges used? (Florisil Cleanup is required for all Pest/PCB extracts.)	✓		
Are all samples listed on the Pesticide Florisil Cartridge Check Form?	✓		

ACTION: If no, take action specified in 3.2 above. If data suggests florisil clean-up was not performed, document in the Data Assessment under the Contract Non-compliance section.

	YES	NO	N/A
9.2 Are percent recoveries (%REC) of the pesticide and surrogate compounds used to check the efficiency of the florisil clean-up procedure within QC limits of 80 - 120%?	✓		

ACTION: Qualify only the analyte(s) which failed the recovery criteria as follows:

If %REC is < 80%, qualify positive results "J" and non-detects "UJ".

If any pesticide %REC was zero, flag non-detects "R" for that compound.

Use professional judgement to qualify positive results if any recoveries are > 120%.

NOTE: Sample data should be evaluated for potential interferences if recovery of 2,4,5-trichlorophenol was > 5% in the Florisil Cartridge Performance Check analysis. Document any problems found in the Data Assessment under the Contract Problems/Non-Compliance section.

YES NO N/A

RT window, qualify all positive results and non-detects as unusable (R).

7.17 Are all %D values for INDA and INDB calibration verification compounds ≥ -25.0% and ≤ +25.0%? [✓] ___ ___

ACTION: If the %D is outside the ±25.0% range for any compound(s), qualify associated positive results for that compound "J" and non-detects "UJ". The "associated samples" are those which followed the last in-control standard up to the next passing standard containing the analyte(s) in question. If the %D is > 90%, flag all non-detects for that analyte "R" (unusable).

8.0 Analytical Sequence Check (Form VIII-PEST)

8.1 Is Form VIII present and complete for each column and each period of analyses? [✓] ___ ___

ACTION: If no, take action specified in 3.2 above.

8.2 Was the proper analytical sequence followed for each initial calibration and subsequent analyses, and all standards analyzed at the required frequency for each GC/EC instrument used.? (See SOW pages D-23 & D-58/PEST.) [✓] ___ ___

ACTION: If no, use professional judgement to determine the severity of the effect on the data and qualify accordingly. Generally, the effect is negligible unless the sequence was grossly altered and/or the calibration was out of QC limits.

8.3 Were all samples analyzed within a 12 hour time period beginning with the injection of an instrument blank and bracketed by acceptable analyses of the proper standards? [✓] ___ ___

ACTION: If no, use professional judgement to determine the severity of the effect on the data and qualify accordingly. Document in the Data Assessment under Contract Problems/Non-Compliance and Organic Regional Data Assessment Summary.

8.4 If a multi-component analyte was detected in a sample, was a matching multi-component standard analyzed within 72 hours of the injection of the

YES NO N/A

"R". If DDT was not detected, but DDD and DDE are positive, then qualify the quantitation limit for DDT as unusable "R".

ii. Qualify positive results for endrin ketone and endrin aldehyde as presumptively present at an approximated quantity "JN". Qualify positive results for DDD and/or DDE as presumptively present at an approximated quantity "JN".

7.13 Are all percent difference (%D) values for PEM analytes and surrogates on both columns ≥ -25% and ≤ +25.0%? (See Form VII PEST-1.) [ ] [✓] [ ]

ACTION: If no, qualify all associated positive results generated during the analytical sequence "J" and sample quantitation limits "UJ".

NOTE: If the failing PEM is part of the initial calibration, all samples are potentially affected. If the offending standard is a calibration verification, the associated samples are those which followed the last in-control standard until the next passing standard.

7.14 Is Form VII Pest-2 present and complete for each INDA and INDB calibration verification analyzed? [✓] [ ] [ ]

ACTION: If no, take action specified in 3.2 above.

7.15 Are there any transcription/calculation errors between raw data and Form VII Pest-2? [ ] [✓] [ ]

ACTION: If large errors exists, take action as specified in section 3.6 above.

7.16 Do all standard retention times for each INDA and INDB calibration verification fall within the RT windows established during the initial calibration sequence? (See Form VII PEST-2.) [✓] [ ] [ ]

ACTION: If no, beginning with the samples which followed the <u>last in-control standard</u>, check to see if the chromatograms contain peaks within an expanded window surrounding the expected retention times. If no peaks are found and the surrogates are visible, non-detects are valid. If peaks are present and cannot be identified through pattern recognition or using a revised

YES NO N/A

exceeded 30.0% in any PEM on either column (required for all PEM analyses)? / [ ]

ACTION: 1. If any percent breakdown has failed the QC criteria in either PEM in steps 2 and 17 in the initial calibration sequence (page D-28/Pest, sec. 9.2.5.6 in the SOW), qualify all samples in the entire analytical sequence as described in sections 2.a, b and c below.

2. If any percent breakdown failed the QC criteria in a PEM calibration verification analysis, review data beginning with the samples which followed the last in-control standard until the next acceptable PEM and qualify the data as described below.

a. 4,4'-DDT Breakdown: If DDT breakdown was > 20.0%:

i. Qualify all positive results for DDT with "J". If DDT was not detected, but DDD and DDE are positive, then qualify the quantitation limit for DDT unusable, "R".

ii. Qualify positive results for DDD and/or DDE as presumptively present at an approximated quantity "JN".

b. Endrin Breakdown: If endrin breakdown was > 20.0%:

i. Qualify all positive results for endrin with "J". If endrin was not detected, but endrin aldehyde and endrin ketone are positive, then qualify the quantitation limit for Endrin as unusable "R".

ii. Qualify positive results for endrin ketone and endrin aldehyde as presumptively present at an approximated quantity "JN".

c. Combined Breakdown: If the combined 4,4'-DDT and endrin breakdown is greater than 30.0%:

i. Qualify all positive results for DDT and Endrin with "J". If endrin was not detected, but endrin aldehyde and endrin ketone are positive, then qualify the quantitation limit for endrin as unusable

	YES	NO	N/A
ACTION: If no, take action as specified in section 3.2 above.			
7.9 For each PEM standard, was the resolution between each pair of adjacent peaks ≥ 90.0% on both columns?	✓		
ACTION: Qualify positive results for compounds not adequately resolved estimated (J). Qualify non-detects based on professional judgement.			
7.10 Have Forms VI PEST-6 & PEST-7 been completed for all midpoint Individual Standards A and B used for initial calibration?	✓		
For each standard, was the resolution between each pair of adjacent peaks ≥ 90.0% on both columns?	✓		
ACTION: If no, qualify positive results for compounds that were not adequately resolved estimated (J). Use professional judgement to determine if non-detects which elute in areas affected by co-eluting peaks should be qualified "N" as presumptive evidence of presence or unusable "R".			
7.11 Is Form VII Pest-1 present and complete for each PEM standard analyzed during the analytical sequence for both columns?	✓		
Was the %Breakdown of DDT and Endrin calculated using the equations given on page D-26/PEST, sec. 9.2.4.8 in the SOW?	✓		
Were all pesticides and surrogates in each PEM standard within the RT windows established during the Initial Calibration?	✓		
ACTION: If no, take action as specified in 3.2 above.			
7.12 Has the individual percent breakdown for DDT/Endrin exceeded 20.0% in any PEM on either column? (See Form VII PEST-1.)			
- for 4,4'-DDT?	✓		
- for Endrin?		✓	
Has the combined percent breakdown for DDT/Endrin			

YES NO N/A

retention times. If no peaks are found and the surrogates are visible, non-detects are valid. If peaks are present and cannot be identified through pattern recognition or using a revised RT window, qualify all positive results "JN" and non-detects as unusable (R). For aroclors, the RT may be outside the window, but the aroclor may still be identified from its distinctive pattern.

7.6 Are the linearity criteria for the initial analyses of Individual Standards A & B within limits for both columns? (%RSD must be ≤ 25.0 for alpha and delta BHC, ≤ 30.0 for the two surrogates and ≤ 20% for all other analytes.) [✓] ___ ___

NOTE: Contractual requirements allow up to two single component TCL compounds, but not surrogates, on each column to exceed the criteria provided the %RSD is ≤ 30%. (See page D-28/Pest, sec. 9.2.5.7 in the SOW.) Technical criteria, however, are the same for all analytes.

ACTION: If technical criteria were not met, qualify all associated positive results generated during the entire analytical sequence "J" and all non-detects "UJ". When %RSD > 90%, flag all non-detect results for that analyte "R" (unusable).

ACTION: If more than two analytes failed %RSD, document in the Data Assessment Contract Problems/Non-Compliance section and Organic Regional Data Assessment Summary form.

7.7 Is the resolution between each pair of adjacent peaks in the Resolution Check Mixture ≥ 60.0% for both columns? (See Form VI PEST-4.) [✓] ___ ___

ACTION: If no, qualify positive results for compounds that were not adequately resolved "J". Use professional judgement to determine if non-detects which elute in areas affected by co-eluting peaks should be qualified "N" as presumptive evidence of presence or unusable (R).

7.8 Is Form VI PEST-5 present and complete for each Performance Evaluation Mixture (PEM) standard used for <u>both initial and continuing</u> calibrations (see SOW section 3.12.4.4, page B-52)? [✓] ___ ___

	YES	NO	N/A
i. Instrument blanks?	✓		
j. Were the appropriate GC columns used as specified on pg. D-11/PEST, sections 6.23.3.1 to 6.23.3.7, in the SOW?	✓		
7.2 Do the chromatograms for all Individual Standard Mixtures and PEM analyses display single component analytes at > 10% but < 100% of full scale (see sections 9.3.5.8.1 thru 9.3.5.8.4, pages D-32 & 33/PEST)?	✓		
Have chromatograms for Individual Standard Mixtures and PEM analyses been replotted, showing scaling factor(s), to meet the above requirements when necessary?			✓

NOTE: All standard chromatograms must clearly display all peaks at > 10% but < 100% of full scale, and replotted if necessary to accommodate peaks not properly scaled in the initial chromatogram(s). Both the initial and replotted chromatograms must be submitted with the data package.

ACTION: If all single component peaks are not clearly displayed on chromatograms for all Individual Standard Mixtures and PEM analyses, notify the WAM to obtain resubmittal of the necessary data.

	YES	NO	N/A
7.3 Are Forms VI PEST 1-7 present and complete for each column and each analytical sequence?	✓		

ACTION: If no, take action as specified in 3.2 above.

	YES	NO	N/A
7.4 Are there any transcription/ calculation errors between raw data and Forms VI?		✓	

ACTION: If large errors exist, take action as specified in section 3.6 above.

	YES	NO	N/A
7.5 Do all standard retention times, including each pesticide in each level of Individual Mixtures A & B, fall within the windows established during the Initial Calibration (see Form VI PEST-1)?	✓		

ACTION: If no, all samples in the entire analytical sequence are potentially affected. Check to see if the chromatograms contain peaks within an expanded window surrounding the expected

YES NO N

to contact the laboratory if the soil blanks are not reported in soil units (µg/kg).

Flag sample result with a "U":	Report CRQL & qualify "U":	No qualification is needed:
Sample conc. > CRQL, but ≤ 5x blank.	Sample conc. < CRQL & is ≤ 5x blank value.	Sample conc. > CRQL & > 5x blank value.

NOTE: If gross blank contamination exists, all data in the associated samples should be qualified as "R", unusable.

6.5 Are there field/rinse/equipment blanks associated with every sample? [ ] / ___

ACTION: For low level samples, note in the Data Assessment that there is no associated field/rinse/equipment blank. For analytes with high concentrations, use professional judgement to qualify these values and document in the Data Assessment.

<u>Exception</u>: samples taken from a drinking water tap do not have associated field blanks.

7.0 Calibration and GC Performance

7.1 Are the following Gas Chromatograms and Data Systems Printouts for both columns present for all samples, blanks and MS/MSD:

a. Peak resolution check? [✓] ___ ___

b. Performance evaluation mixtures? [✓] ___ ___

c. Aroclor 1016/1260? [✓] ___ ___

d. Aroclors 1221, 1232, 1242, 1248, 1254? [✓] ___ ___

e. Toxaphene? [✓] ___ ___

f. Low points individual mixtures A & B? [✓] ___ ___

g. Med points individual mixtures A & B? [✓] ___ ___

h. High points individual mixtures A & B? [✓] ___ ___

	YES	NO	N/A
analyte?			✓
6.3 In any instrument blanks, is the concentration of any target hit > 0.5 times CRQL for that analyte (see SOW, section 12.1.4.4.2, page D-77/PEST)?		✓	

NOTE: Most labs will report 0.5 times CRQLs on the instrument blank Form I instead of the actual method CRQLs. If the lab reported the actual CRQLs, then check if any detected hits are above 0.5 times the CRQLs reported on the Form I.

ACTION: If yes to any of the above questions: note in the Data Assessment under Contract Problems/Non-Compliance if any method or clean-up blanks contain hits > the CRQL, or of instrument blank contained hits > 0.5 times CRQL for that analyte.

6.4 Do any field/rinse blanks have positive pest/PCB results?			✓

ACTION: Prepare a list of the samples associated with each contaminated blank. (Attach a separate sheet)

NOTE: All field blank results associated to a particular group of samples (may exceed one per case or one per day) may be used to qualify data. Do not convert <u>field blank</u> results to account for the difference in soil CRQLs. Blanks may not be qualified because of contamination in another blank. Field blanks must be qualified for surrogate, and/or calibration QC problems.

ACTION: Follow the directions in the table below to qualify TCL results due to contamination. Use the largest value from all the associated blanks.

NOTE: When applied as directed in the table below, the contaminant concentration in method/instrument/reagent/cleanup blanks is multiplied by the sample dilution factor, where necessary.

If the laboratory has not already done so, the contaminant concentration in <u>soil</u> blanks is multiplied by 33 times the sample dilution factor and corrected for %moisture (fraction of solid) where necessary. 30 grams of sodium sulfate are used to prepare each soil reagent/method blank as instructed on page D-72/PEST, section 12.1.3.3.1. Ask the WAM

	YES	NO	N/
blank, and once under the sulfur clean-up blank (PCBLK). Was this additional blank raw data and Form IV submitted when required?	[ ]		/
ACTION: If sulfur clean-up blank data and Form IV are missing, take action as specified in 3.2 above.			
5.4 Has a PEST/PCB instrument blank been analyzed at the beginning of every 12 hr. period following the initial calibration sequence (minimum contract requirement)?	[/]		
ACTION: If any blank data are missing, take action as specified in section 3.2 above.			
5.5 Was the correct identification scheme used for all Pest/PCB blanks? (See page 3-33, sec. 3.3.7.3 of the SOW for further information.)	[/]		
ACTION: Contact the WAM to obtain resubmittals or make the required corrections on the forms. Document in the Data Assessment under Contract Problems/Non-Compliance all corrections made by the validator.			
5.6 <u>Chromatography</u>: review the blank raw data - chromatograms, quant. reports and data system printouts. Is the chromatographic performance (baseline stability) for each instrument acceptable?	[/]		
ACTION: Use professional judgement to determine the effect on the data.			

6.0 Contamination

NOTE: "Water blanks", "distilled water blanks" and "drilling water blanks" are validated like any other sample and are <u>not</u> used to qualify the data. Do not confuse them with the other QC blanks discussed below.

6.1 Do any method/reagent, instrument, or cleanup blanks show positive hits for pest/PCBs?	/	[ ]	
6.2 If any method blanks and/or sulfur clean-up blanks contain "hits" for target compounds, are these hits greater than the CRQL for that			

	YES	NO	N/A
b. Soil?	✓		

ACTION: If any matrix spike data are missing, take the action specified in 3.2 above.

ACTION: Circle all outliers with red pencil.

4.3 How many PEST/PCB spike recoveries are outside QC limits?

Water	Soil
_____ out of 12	8 out of 12

4.4 How many RPDs for matrix spike and matrix spike duplicate recoveries are outside QC limits?

Water	Soil
_____ out of 6	0 out of 6

ACTION: No action is taken on MS/MSD data alone. However, using informed professional judgement, the data reviewer may use the matrix spike and matrix spike duplicate results in conjunction with other QC criteria and determine the need for some qualification of the data.

5.0 Blanks (Form IV)

	YES	NO	N/A
5.1 Is the Method Blank Summary (Form IV) present?	✓		
5.2 Frequency of Analysis: Has a reagent/method blank been analyzed for each SDG, every 20 samples of similar matrix and concentration level or each extraction batch, whichever is more frequent?	✓		

ACTION: If any blank data are missing, take action as specified above in section 3.2. If blank data is not available, reject "R" all associated positive data. However, using professional judgement, the data reviewer may substitute field blank data for missing method blank data.

5.3 A separate Form IV should be present if part of an extraction batch required sulfur removal. In such cases some samples will be listed on two blank summary forms - once under the method

YES NO N/

If recoveries are above the contract limit for both surrogates on both columns, then qualify positive values "J".

If both surrogates on one column are below the contract limit but above 10%, then use the data from the other column, providing both surrogates on that column are within contract limits. The validator must check from which column the concentration is reported for each analyte. If the value is reported from the failed column, then cross it out and use the value from the other column. Document this change in the Data Assessment.

If recovery is below 10% for either surrogate on any column, qualify positive results "J" and flag non-detects "R".

3.5 Were surrogate retention times (RT) within the windows established during the initial 3-point analysis of Individual Standard Mixture A (see Form VI Pest-1)? [ ] / ___

ACTION: If the RT limits are not met, positive results and non-detects for that sample may be qualified unusable, "R", based on professional judgement.

3.6 Are there any transcription/calculation errors between raw data and Form II? ___ [/] ___

ACTION: If large errors exist, contact the WAM to obtain an explanation or resubmittal of corrected deliverables from the laboratory. Make any necessary corrections and document the effect in the Data Assessment.

4.0 Matrix Spikes (Form III)

4.1 Is the Matrix Spike/Matrix Spike Duplicate Recovery Form (Form III) present? [/] ___ ___

4.2 Were matrix spikes analyzed at the required frequency for each of the following matrices (one MS/MSD must be performed for every 20 samples of similar matrix or concentration level):

a. Low Water? [ ] ___ /

	YES	NO	N/A
a. Low Water?	[ ]		✓
b. Soil?	✓		

ACTION: Contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the laboratory. If missing deliverables are unavailable, document the effect in the Data Assessment.

3.3 Were outliers marked correctly with an asterisk?	[ ]		✓

ACTION: Circle all outliers with red pencil.

3.4 Were surrogate recoveries of TCX or DCB outside of the contract specification for any sample, method blank or sulfur clean-up blank (30-150%)?		✓	

ACTION: In the absence of matrix interference, qualification of the data is not required in the following three situations:

1. When surrogates on both columns are diluted out.

2. When one surrogate on one column was outside (either above or below) the contract limits but above 10%.

3. When the same surrogate on both columns is above the contract limit.

If the same surrogate on both columns is below the contract limit but above 10%, check chromatograms for interference. The reviewer may use professional judgement, and qualify only those analytes which elute in the region of the GC chromatogram where interference was observed.

If the same surrogate on both columns is below the contract limit but above 10% (with no interference), qualify non-detects and positive hits "J" (estimated).

If recoveries for both surrogates on both columns are below the contract limit but above 10%, flag positive results and non-detects for that sample "J".

YES NO N/A

PART C: PESTICIDE/PCB ANALYSIS

1.0 Sample Conditions/Problems

1.1 Do the Traffic Reports/Chain-of-Custody Records or SDG Narrative indicate any problems with sample receipt, condition of the samples, analytical problems or special circumstances affecting the quality of the data? ___ [ ] ___

ACTION: If any sample analyzed as a soil, other than TCLP, contains 50% - 90% water, all data should be qualified as estimated "J". If a soil sample, other than TCLP, contains more than 90% water, all data should be qualified as unusable "R".

BW280
BW280DL
BW282
BW282DL
BW286
BW286DL
BW287
BW287DL

ACTION: If samples were not iced, or if the ice was melted upon arrival at the laboratory, and the temperature of the cooler was elevated > 10° C, flag all positive results "J" and all non-detects "UJ".

ACTION: Check aqueous extraction log for sample pH, if adjustment was needed, it should have been noted in the SDG Narrative. If more information is needed, notify the WAM to contact the lab.

2.0 Holding Times

2.1 Have any PEST/PCB technical holding times, determined from date of collection to date of extraction, been exceeded? ___ [✓] ___

NOTE: Technical Holding Times: Water and soil samples for PEST/PCB analysis must be extracted within 7 days of the date of collection. Extracts must be analyzed within 40 days of the date extraction.

ACTION: If technical holding times are exceeded, flag all positive results as estimated "J" and sample quantitation limits "UJ" and document in the narrative that holding times were exceeded. If analyses were done more than 14 days beyond holding time, either on the first analysis or upon re-analysis, the reviewer must use professional judgement to determine the

YES NO N/

reliability of the data and the effects of additional storage on the sample results. At a minimum, all the data should at least be qualified "J", but the reviewer may determine that non-detects are unusable "R".

Table of Holding Time Violations
(See Chain-of-Custody Records)

Sample Analyzed	Sample Matrix	Date Sampled	Date Lab Received	Date Extracted	Date Analyzed

NOTE: Contractual Holding Times: Extraction of water samples must be completed within 5 days VTSR. Soil/sediment samples must be extracted within 10 days of VTSR. This requirement does not apply to Performance Evaluation (PE) samples. Extracts of water and soil/sediment samples must be analyzed within 40 days following start of extraction.

ACTION: If contractual holding times are exceeded, document in the Data Assessment and Organic Regional Data Assessment Summary form.

NOTE: The data reviewer must note in the Data Assessment whether or not technical and contractual holding times were met.

3.0 Surrogate Recovery (Form II)

3.1 Are the PEST/PCB Surrogate Recovery Summaries (Form II) present for each of the following matrices:

a. Low Water? [ ] ___ ✓

b. Soil? [✓] ___ ___

3.2 Are all the PEST/PCB samples listed on the appropriate Surrogate Recovery Summary for each of the following matrices:

	YES	NO	N/A
4.0 Data Validation Checklist			
4.1 Check the package for the following discrepancies:			
a. Is the package paginated in ascending order starting from the SDG narrative?	[ ]	✓	
b. Are all forms and copies legible?	[✓]		
c. Is each fraction assembled in the order set forth in the SOW?	[✓]		
d. Is a Sample Data Summary Package submitted immediately preceding the Sample Data Package?	[✓]		

The following checklist is divided into three parts. Part A is for any VOA analyses, Part B is for BNAs and Part C is Pesticide/PCBs.

Does this package contain:

VOA Data?		✓	
BNA Data?		✓	
Pesticide/PCB data?	✓		

ACTION: Complete corresponding parts of checklist.

	YES	NO	N/A
ACTION: If yes, contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the laboratory.			
3.0 Cover Letter SDG Narrative			
3.1 Is the Narrative or Cover Letter Present?	[✓]		
3.2 Are case number, SDG number and contract number contained in the SDG Narrative or cover letter (see SOW, Exhibit B, section 2.6.1)?	[✓]		
3.3 Does the narrative contain the following information:			
VOA: description of trap and columns used during sample analyses?	[ ]		✓
BNA: description of columns used during sample analyses?	[ ]		✓
Pest: description of columns used during sample analyses?	[✓]		
NOTE: As per section 6.23.3.1 SOW/p. D-11/Pest, Packed columns are not permitted.			
3.4 Does the narrative, VOA and BNA sections, contain a list of all TICs identified as alkanes and their estimated concentrations?	[ ]		✓
3.5 Does the narrative contain a record of all cooler temperatures? If the temperature of a cooler was exceeded, > 10° C, the lab must list by fraction and sample number, all affected samples.	[✓]		
3.6 Does the narrative contain a list of the pH values determined for each water sample submitted for volatile analysis (SOW Exhibit B, section 2.6.1.2)?	[ ]		✓
3.7 Does the Case Narrative contain the statement, "verbatim", as required in Section B of the SOW?	[✓]		

ACTION: If "No", to any question in this section, contact the WAM to obtain all necessary resubmittals. If information is not available, document in the Data Assessment under Contract Problems/Non-Compliance section.

	YES	NO	N/A

PACKAGE COMPLETENESS AND DELIVERABLES

CASE NUMBER: 27133 LABORATORY: SWOK

SITE NAME: Cornell Dubilier SDG Number(s): BWZ67

1.0 Chain of Custody and Sampling Trip Reports

1.1 Are the Traffic Reports/Chain-of-Custody Records present for all samples? [✓] ___ ___

ACTION: If no, contact RSCC, or contact the WAM to obtain replacement of missing or illegible copies from the lab.

1.2 Is the Sampling Trip Report present for all samples and all fractions? [✓] ___ ___

ACTION: If no, contact either RSCC or ask the WAM to obtain this information from the prime contractor.

2.0 Data Completeness and Deliverables

2.1 Have any missing deliverables been received and added to the data package? ✓ ___

NOTE: The lab is required to submit data for only two analyses, for each fraction. (i.e., the original sample and one dilution, or the most concentrated dilution analyzed and one further dilution.)

ACTION: Contact the WAM to obtain an explanation or resubmittal of any missing deliverables from the lab. If lab cannot provide them, note the effect on the review of the package in the Contract Problems/Non-compliance section of the Data Assessment and the Organic Regional Data Assessment Summary form.

2.2 Was CLASS CCS checklist included with package? [ ] ✓ ___

.3 Are there any discrepancies between the Traffic Reports/Chain-of-Custody Records, Sampling Report and Sample Tags? ___ [✓] ___

DATA REJECTION SUMMARY

Type of Review: Organic Date: 7/21/99 Case No.27133, SDG# BWZ67

Site Name: Cornell-Dubilier Lab Name: SWOK Reviewer's Initials: MZ

Number of Samples: H_2O, 20 soils, +QC + reanalyses/dilutions

Analytes Rejected Due To Exceeding Review Criteria For:

No. of Compounds/No. of Fractions(Samples)

	Surrogates	Holding Times	Calibrat-ion	Contam-ination	ID	Internal Standards	Other	Total # Samples	Total # Rejected/ Total # in All Samples
VOA(41)	0	0	0	0	0	0	0	0	NA
ACID(14)	0	0	0	0	0	0	0	0	NA
B/N(45)	0	0	0	0	0	0	0	0	NA
PEST(21)	0	0	0	0	0	0	0	0	NA
PCB(7)	0	0	0	0	0	0	0	45	0/315 = 0%

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITIERIA.

Analytes Estimated Due To Exceeding Review Criteria For:

No. of Compounds/No. of Fractions(Samples)

	Surrogates	Holding Times	Calibrat-ion	Contam-ination	ID	Internal Standards	Other	Total # Samples	Total # estimated/ Total # in All Samples
VOA(41)	0	0	0	0	0	0	0	0	NA
ACID(14)	0	0	0	0	0	0	0	0	NA
B/N(45)	0	0	0	0	0	0	0	0	NA
PEST(21)	0	0	0	0	0	0	0	0	NA
PCB(7)	0	56	0	0	1	0	1	45	58/315 = 18%

NOTE: ASTERISK (*) INDICATES ADDITIONAL EXCEEDANCES OF REVIEW CRITIERIA.

DPO: []ACTION []FYI REGION__2_

ORGANIC REGIONAL DATA ASSESSMENT SUMMARY

CASE NO._27133__ LABORATORY_SWOK_____

SDG NO. BWZ67 _ DATA USER___EPA/Region II_____

SOW_OLMO 3.2 _____ REVIEW COMPLETION DATE_7/21/99___

NO. OF SAMPLES_____WATER ____20___SOIL _____OTHER

REVIEWER: [] ESD [x] ESAT [] OTHER, CONTRACTOR_____

QC ITEM	VOA	BNA	PEST		
HOLDING TIMES			M		
GC-MS PERFORMANCE			O		
INITIAL CALIBRATIONS			O		
CONTINUING CALIBRATIONS			O		
FIELD BLANKS(F = N/A)			O		
LABORATORY BLANKS			O		
SURROGATES			O		
MATRIX SPIKE/DUPLICATES			O		
QC SAMPLES(LCS, PVS)			O		
INTERNAL STANDARDS			F		
COMPOUND IDENTIFICATION			X		
COMPOUND QUANTITATION			X		
SYSTEM PERFORMANCE			O		
OVERALL ASSESSMENT			M		

O = No problems or minor problems that do not affect data usability.
X = No more than about 5% of the data points are qualified as either estimated or unusable.
M = More than about 5% of the data points are qualified as either estimated or unusable.
Z = More than about 5% of the data points are qualified as unusable.

PEM in which the DDT % breakdown exceeds criteria. DDD and/or DDE was detected in the sample, but DDT was not detected. Non-detect DDT in associated samples is qualified "R".

BWZ67

DC-228: The following pesticide samples are associated with a continuing PEM in which the DDT % breakdown exceeds criteria. DDD and DDE detected in associated samples are qualified "NJ".

BWZ67MS, BWZ67MSD, BWZ69, BWZ70, BWZ71, BWZ72
BWZ73, BWZ74, BWZ75, BWZ76, BWZ77, BWZ78
BWZ79, BWZ80, BWZ81, BWZ82, BWZ83, BWZ85
BWZ86, BWZ87, BWZ88

BWZ76
4,4'-DDT, Methoxychlor

BWZ77
4,4'-DDT, Methoxychlor

BWZ78
4,4'-DDT, Methoxychlor

BWZ79
4,4'-DDT, Methoxychlor

BWZ80
4,4'-DDT, Methoxychlor

BWZ81
4,4'-DDT, Methoxychlor

BWZ82
4,4'-DDT, Methoxychlor

BWZ83
4,4'-DDT, Methoxychlor

BWZ85
beta-BHC, 4,4'-DDT, Methoxychlor

BWZ86
beta-BHC, 4,4'-DDT, Methoxychlor

BWZ87
beta-BHC, 4,4'-DDT, Methoxychlor

BWZ88
beta-BHC, 4,4'-DDT, Methoxychlor

DC-226: The following pesticide samples are associated with a continuing PEM in which the DDT % breakdown exceeds criteria.
DDT detected in associated samples is qualified "J".

BWZ67MS, BWZ67MSD, BWZ69, BWZ70, BWZ71, BWZ72
BWZ73, BWZ74, BWZ75, BWZ76, BWZ77, BWZ78
BWZ79, BWZ80, BWZ81, BWZ82, BWZ83, BWZ85
BWZ86, BWZ87, BWZ88

DC-227: The following pesticide samples are associated with a continuing

SDG NO: BWZ67
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ67.ASF

SYSTEM PERFORMANCE CRITERIA

Resolution & Breakdown Limits

RESC percent resolution	60.00
PEM percent resolution	90.00
4,4'-DDT percent breakdown	20.00
Endrin percent breakdown	20.00
Combined percent breakdown	30.00

DC-215: The following pesticide samples are associated with a continuing PEM in which the RPD between the nominal and calculated amounts for a PEM compound is outside criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

BWZ67
4,4'-DDT, Methoxychlor

BWZ67MS
4,4'-DDT, Methoxychlor

BWZ67MSD
4,4'-DDT, Methoxychlor

BWZ69
4,4'-DDT, Methoxychlor

BWZ70
4,4'-DDT, Methoxychlor

BWZ71
4,4'-DDT, Methoxychlor

BWZ72
4,4'-DDT, Methoxychlor

BWZ73
4,4'-DDT, Methoxychlor

BWZ74
4,4'-DDT, Methoxychlor

BWZ75
4,4'-DDT, Methoxychlor

BWZ67, BWZ67DL, BWZ67MS, BWZ67MSD, BWZ69, BWZ69DL
BWZ70, BWZ70DL, BWZ71, BWZ71DL, BWZ72, BWZ72DL
BWZ73, BWZ73DL, BWZ74, BWZ74DL, BWZ75, BWZ75DL
BWZ76, BWZ76DL, BWZ77, BWZ77DL, BWZ78, BWZ78DL
BWZ79, BWZ79DL, BWZ80, BWZ80DL, BWZ81, BWZ81DL
BWZ82, BWZ82DL, BWZ83, BWZ83DL, BWZ85, BWZ85DL
BWZ86, BWZ86DL, BWZ87, BWZ87DL, BWZ88, BWZ88DL
PBLKSH, PBLKSI, PBLKSJ

SDG NO: BWZ67
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ67.ASF

CALIBRATION CRITERIA

Pesticide

Maximum %RSD (initial calibration)	- TCL analytes	20
	- surrogates	30
Maximum RPD (continuing calibration)		25
INDA/INDB percent resolution		90
Continuing calibration sequence time		12

DC-195: The RPD between the nominal and the calculated amount of an analyte in the midpoint INDA/INDB exceeded criteria. Hits are qualified "J" and non-detects are qualified "UJ".

BWZ85
delta-BHC

BWZ85DL
delta-BHC

BWZ86
delta-BHC

BWZ86DL
delta-BHC

BWZ87
delta-BHC

BWZ87DL
delta-BHC

BWZ88
delta-BHC

BWZ88DL
delta-BHC

PBLKSI
delta-BHC

DC-197: The following pesticide samples are not qualified because of missing calibration verification information. Visual inspection of the data is required.

Laboratory Blanks Report

SDG NO: BWZ67
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ67.ASF

LABORATORY BLANKS CRITERIA

Pesticide

Method Blank Contamination Threshold Multipliers

	First	Expanded
All compounds	5.00	5.00

DC-236: The following pesticide samples have analyte concentrations reported below the CRQL and less than or equal to five times (5X) the associated method blank concentration. Reported sample concentrations are elevated to the CRQL and qualified "U."

BWZ85DL
gamma-Chlordane

BWZ86DL
gamma-Chlordane

BWZ87DL
gamma-Chlordane

BWZ88DL
gamma-Chlordane

MATRIX SPIKE CRITERIA

Pesticide

Percent Recovery Limits & RPD

	Water			Soil		
	Lower	Upper	RPD	Lower	Upper	RPD
gamma-BHC (Lindane)	56.0	123.0	15.0	46.0	127.0	50.0
Heptachlor	40.0	131.0	20.0	35.0	130.0	31.0
Aldrin	40.0	120.0	22.0	34.0	132.0	43.0
Dieldrin	52.0	126.0	18.0	31.0	134.0	38.0
Endrin	56.0	121.0	21.0	42.0	139.0	45.0
4,4'-DDT	38.0	127.0	27.0	23.0	134.0	50.0

DC-170: The following pesticide matrix spike/matrix spike duplicate samples have percent recovery outside criteria. Use professional judgement to qualify the data.

BWZ67MS

gamma-BHC (Lindane), Dieldrin, Endrin, 4,4'-DDT

BWZ67MSD

gamma-BHC (Lindane), Dieldrin, Endrin, 4,4'-DDT

SDG NO: BWZ67
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ67.ASF

SMC/SURROGATE CRITERIA

Pesticide

Percent Recovery Limits

	--- Water ---		---- Soil ---	
	Lower	Upper	Lower	Upper
Tetrachloro-m-xylene	30.0	150.0	30.0	150.0
Decachlorobiphenyl	30.0	150.0	30.0	150.0

DC-174: The following pesticide samples have surrogate percent recoveries which exceed the upper limit of the criteria window.
If %R for both surrogates on both columns are > contract limit, hits are flagged "J".

BWZ67, BWZ67DL, BWZ67MS, BWZ67MSD, BWZ69, BWZ69DL
BWZ70, BWZ71, BWZ71DL, BWZ72, BWZ72DL, BWZ73
BWZ73DL, BWZ74, BWZ74DL, BWZ75, BWZ75DL, BWZ76
BWZ76DL, BWZ77, BWZ77DL, BWZ78, BWZ78DL, BWZ79
BWZ79DL, BWZ80, BWZ80DL, BWZ81, BWZ81DL, BWZ82
BWZ82DL, BWZ83, BWZ83DL, BWZ85, BWZ85DL, BWZ86
BWZ86DL, BWZ87, BWZ87DL, BWZ88

DC-176: The following diluted pesticide samples have surrogate percent recoveries of less than 10%. Professional judgement is recommended.
Hits and non-detects are not flagged.

BWZ67DL, BWZ69DL, BWZ70DL, BWZ71DL, BWZ72DL, BWZ73DL
BWZ74DL, BWZ75DL, BWZ76DL, BWZ77DL, BWZ78DL, BWZ79DL
BWZ80DL, BWZ81DL, BWZ82DL, BWZ83DL, BWZ88DL

DC-178: The following pesticide samples are not fully qualified for surrogate RT because of missing RT information. Visual inspection of the data is required. Samples with surrogates falling outside the RT window should be qualified based on professional judgement.

BWZ67DL, BWZ69DL, BWZ70DL, BWZ71DL, BWZ72DL, BWZ73DL
BWZ74DL, BWZ75DL, BWZ76DL, BWZ77DL, BWZ78DL, BWZ79DL
BWZ80DL, BWZ81DL, BWZ82DL, BWZ83DL, BWZ88DL

Holding Time Report

SDG NO: BWZ67
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ67.ASF

HOLDING TIME CRITERIA

Pesticide

	--- Extraction ---		---- Analysis ----	
	Primary	Expanded	Primary	Expanded
Water	7	28	40	60
Soil	7	28	40	60

No problems found for this qualification.

CLP DATA ASSESSMENT

BWZ74DL, BWZ75DL, BWZ76DL, BWZ77DL, BWZ78DL, BWZ79DL, BWZ80DL, BWZ81DL, BWZ82DL, BWZ83DL, BWZ85DL, BWZ86DL, BWZ87DL, and BWZ88DL.

CLP DATA ASSESSMENT

A) Volatile and Semi-Volatile Fractions:

TCL compounds are identified on the GC/MS by using the analyte's relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within ± 0.06 RRT units of the standard compound and have an ion spectra which has a ratio of the primary and secondary m/e intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications.

B) Pesticide Fraction:

The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ng/ml in the final sample extract.
PCB: The following sample was qualified "J" for Aroclor 1254 due to exceeding % D criteria of 50% between columns: BWZ88.

10. CONTRACT PROBLEMS NON-COMPLIANCE:

PCB: The following diluted samples were not required since the reported analytes in the orginal samples did not exceed the initial calibration high point standards as required by the SOW, D-59/Pest10.2.3.2 and 10.2.3.3: BWZ69DL, BWZ70DL, BWZ72DL, BWZ78DL, BWZ79DL, BWZ80DL, BWZ81DL, BWZ82DL, BWZ85DL, BWZ86DL, and BWZ87DL.

11. FIELD DOCUMENTATION:

12. OTHER PROBLEMS:

PCB: Do not use pages 623 and 624, these two pages are duplicates of PEM6K. PEM6K was corrected for the original integration of endrin ketone on the quantitation report and the chromatograms.

The quantitation report for INDBL6D did not have a page number. This page is located between 641 and 642.

13. This package contains reextractions, reanalyses or dilutions. Upon reviewing the QA results, the following Form 1(s) are identified not to be used.

PCB: BWZ67DL, BWZ69DL, BWZ70DL, BWZ71DL, BWZ72DL, BWZ73DL,

BWZ83DL

Heptachlor epoxide, 4,4'-DDE, Endrin, Endrin aldehyde

BWZ85

Heptachlor epoxide, Endosulfan I, alpha-Chlordane, gamma-Chlordane

BWZ85DL

Heptachlor epoxide, Dieldrin, Endrin, gamma-Chlordane

BWZ86

Heptachlor epoxide, Endosulfan II, 4,4'-DDD, alpha-Chlordane

BWZ86DL

Heptachlor epoxide, Dieldrin, gamma-Chlordane

BWZ87

Heptachlor epoxide, Endosulfan II, 4,4'-DDD, alpha-Chlordane

BWZ87DL

Heptachlor epoxide, Dieldrin, gamma-Chlordane

BWZ88

Heptachlor epoxide, Endosulfan I, Endosulfan II, alpha-Chlordane

BWZ88DL

Heptachlor epoxide, Dieldrin, gamma-Chlordane

PBLKSI

gamma-Chlordane

4,4'-DDT, Methoxychlor, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ77DL
4,4'-DDE, Endrin, Endrin aldehyde, gamma-Chlordane

BWZ78
Heptachlor epoxide, Endosulfan I, Endosulfan II, 4,4'-DDD
4,4'-DDT, Methoxychlor, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ78DL
Endosulfan I, 4,4'-DDT

BWZ79
Endrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ79DL
4,4'-DDE, Endrin, Endrin aldehyde

BWZ80
Endosulfan I, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ80DL
Endosulfan I, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate

BWZ81
Endrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ81DL
4,4'-DDE, Endrin, Endrin aldehyde

BWZ82
Endosulfan I, Endosulfan II, 4,4'-DDT, Endrin aldehyde
alpha-Chlordane

BWZ82DL
Endosulfan I, Endrin, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ83
Endrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ71

Heptachlor epoxide, Dieldrin, Endosulfan II, 4,4'-DDD
4,4'-DDT, Methoxychlor, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ71DL

4,4'-DDE, Endosulfan sulfate, Endrin aldehyde, gamma-Chlordane

BWZ72

Dieldrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Methoxychlor, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ72DL

Dieldrin, Endrin aldehyde, gamma-Chlordane

BWZ73

Heptachlor epoxide, Dieldrin, Endosulfan II, 4,4'-DDD
4,4'-DDT, Methoxychlor, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ73DL

Dieldrin, Endosulfan sulfate, Endrin aldehyde, gamma-Chlordane

BWZ74

Endrin, Endosulfan sulfate, 4,4'-DDT, Endrin aldehyde
alpha-Chlordane, gamma-Chlordane

BWZ74DL

Endrin, Endrin aldehyde, gamma-Chlordane

BWZ75

Endrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ75DL

Heptachlor epoxide, 4,4'-DDE, Endrin, Endrin aldehyde

BWZ76

Endrin, 4,4'-DDT, Endrin aldehyde, alpha-Chlordane
gamma-Chlordane

BWZ76DL

Heptachlor epoxide, Endrin, Endrin aldehyde

BWZ77

Endosulfan I, Endrin, Endosulfan II, 4,4'-DDD

BWZ87DL

4,4'-DDE, alpha-Chlordane

BWZ88

Dieldrin, 4,4'-DDE, 4,4'-DDT, Endrin aldehyde
gamma-Chlordane, Aroclor-1254

PBLKSI

Heptachlor

DC-423: The following pesticide samples have analytes for which the percent difference between column results exceeds expanded criteria. Hits > CRQL are flagged "NJ;" or "R" when %D > 100; or "NJ" when %D is between 100 - 200 (interference detected). Hits < CRQL are elevated to the CRQL and qualified "U."

BWZ67

Heptachlor epoxide, Dieldrin, Endosulfan II, 4,4'-DDD
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ67DL

Dieldrin, 4,4'-DDE, Endosulfan sulfate, gamma-Chlordane

BWZ67MS

gamma-BHC (Lindane), Heptachlor, Aldrin, Dieldrin
Endosulfan II, 4,4'-DDD, 4,4'-DDT, Methoxychlor
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ67MSD

gamma-BHC (Lindane), Heptachlor, Aldrin, Dieldrin
Endosulfan II, 4,4'-DDD, 4,4'-DDT, Endrin aldehyde
alpha-Chlordane, gamma-Chlordane

BWZ69

Dieldrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Methoxychlor, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ69DL

Dieldrin, Endrin aldehyde, gamma-Chlordane

BWZ70

Dieldrin, Endosulfan II, 4,4'-DDD, 4,4'-DDT
Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ70DL

gamma-Chlordane

BWZ76DL

4,4'-DDE, Endosulfan sulfate, gamma-Chlordane

BWZ77DL

Endosulfan I, Endosulfan sulfate

BWZ78DL

Dieldrin, Endrin, Endosulfan sulfate, Endrin aldehyde

BWZ79DL

Dieldrin, Endosulfan sulfate, gamma-Chlordane

BWZ80

Endrin

BWZ80DL

Endrin aldehyde, gamma-Chlordane, Aroclor-1254

BWZ81DL

Endosulfan sulfate, gamma-Chlordane

BWZ82

4,4'-DDD, gamma-Chlordane

BWZ83

Methoxychlor

BWZ83DL

Endosulfan sulfate, gamma-Chlordane

BWZ85

Dieldrin, 4,4'-DDE, 4,4'-DDT, Endrin aldehyde

Aroclor-1254

BWZ85DL

alpha-Chlordane

BWZ86

Dieldrin, 4,4'-DDE, Endrin aldehyde

BWZ86DL

4,4'-DDE, alpha-Chlordane

BWZ87

Dieldrin, 4,4'-DDE, 4,4'-DDT, Endrin aldehyde

BWZ87

Endrin, Endosulfan II, 4,4'-DDD, Endrin aldehyde

BWZ87DL

Heptachlor epoxide, Dieldrin, 4,4'-DDE, alpha-Chlordane gamma-Chlordane, Aroclor-1254

BWZ88DL

Heptachlor epoxide, Dieldrin, 4,4'-DDE, gamma-Chlordane

PBLKSI

Heptachlor, gamma-Chlordane

DC-422: The following pesticide samples have analytes for which the percent difference between column results exceeds primary criteria. Hits > CRQL are flagged "J." Or: if %D is > 50% and value is < CRQL, sample result is elevated to the CRQL and qualified "U."

BWZ67

Endosulfan sulfate, Methoxychlor

BWZ67MS

Endrin

BWZ67MSD

Endrin, Methoxychlor

BWZ69DL

Endosulfan sulfate

BWZ73DL

4,4'-DDE

BWZ74DL

4,4'-DDE, Endosulfan sulfate, alpha-Chlordane

BWZ75

Endosulfan sulfate

BWZ75DL

Endosulfan sulfate, gamma-Chlordane

BWZ76

Endosulfan sulfate

Endosulfan sulfate, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ80

Endosulfan II, 4,4'-DDD, 4,4'-DDT, Methoxychlor

Endrin aldehyde

BWZ80DL

Endosulfan I, Dieldrin, 4,4'-DDE, Endrin

Endosulfan sulfate, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

Aroclor-1254

J

BWZ81

Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ81DL

Endosulfan I, Dieldrin, 4,4'-DDE, Endrin

Endosulfan sulfate, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ82

Endosulfan II, 4,4'-DDD, 4,4'-DDT, Methoxychlor

Endrin aldehyde

BWZ82DL

Endosulfan I, Dieldrin, 4,4'-DDE, Endrin

Endosulfan sulfate, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

Aroclor-1254

J

BWZ83

Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ83DL

Heptachlor epoxide, Dieldrin, 4,4'-DDE, Endrin

Endosulfan sulfate, Endrin aldehyde

BWZ85

Endosulfan I, Endrin aldehyde

BWZ85DL

Heptachlor epoxide, Dieldrin, 4,4'-DDE, Endrin

alpha-Chlordane, gamma-Chlordane

BWZ86

Endrin, Endosulfan II, 4,4'-DDD, Endrin aldehyde

BWZ86DL

Heptachlor epoxide, Dieldrin, 4,4'-DDE, alpha-Chlordane

gamma-Chlordane, Aroclor-1254

J

BWZ72DL

Dieldrin, Endrin aldehyde, alpha-Chlordane

BWZ73

Heptachlor epoxide, Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ73DL

Dieldrin, 4,4'-DDE, Endosulfan sulfate, Endrin aldehyde

BWZ74DL

Endosulfan I, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate, Endrin aldehyde, alpha-Chlordane, gamma-Chlordane

BWZ75

Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ75DL

Heptachlor epoxide, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate, Endrin aldehyde

BWZ76

Methoxychlor

BWZ76DL

Heptachlor epoxide, Dieldrin, 4,4'-DDE, Endrin
Endosulfan sulfate, Endrin aldehyde

BWZ77

Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ77DL

Dieldrin, 4,4'-DDE, Endrin, Endosulfan sulfate
Endrin aldehyde

BWZ78

Heptachlor epoxide, Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ78DL

Heptachlor epoxide, Endosulfan I, Dieldrin, 4,4'-DDE
Endrin, Endosulfan sulfate, 4,4'-DDT, Endrin aldehyde
gamma-Chlordane

BWZ79

Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ79DL

Endosulfan I, Dieldrin, 4,4'-DDE, Endrin

SDG NO: BWZ67
CASE NO: 27133

LABORATORY: SWL-TULSA
AGENCY INPUT FILE: BWZ67.ASF

CONTRACT REQUIRED SAMPLE QUANTITY

	Water	Low Soil	Med Soil
PES	1000.0 (ML)	30.0 (G)	

DC-158: The following pesticide samples have analyte concentrations below the quantitation limit (CRQL). All results below the CRQL are qualified "J".

BWZ67
Heptachlor epoxide, Endosulfan II, Methoxychlor

BWZ67DL
Dieldrin, 4,4'-DDE, Endosulfan sulfate, Endrin aldehyde

BWZ67MS
gamma-BHC (Lindane), Heptachlor, Aldrin, Methoxychlor

BWZ67MSD
gamma-BHC (Lindane), Heptachlor, Aldrin, Endosulfan II
Methoxychlor

BWZ69
Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ69DL
Dieldrin, Endosulfan sulfate, Endrin aldehyde, alpha-Chlordane

BWZ70
Endosulfan II, 4,4'-DDD, 4,4'-DDT, Endrin aldehyde

BWZ70DL
alpha-Chlordane, gamma-Chlordane, Aroclor-1254 J

BWZ71
Heptachlor epoxide, Endosulfan II, 4,4'-DDD, Methoxychlor

BWZ71DL
Dieldrin, 4,4'-DDE, Endosulfan sulfate, Endrin aldehyde

BWZ72
Endosulfan II, 4,4'-DDD, 4,4'-DDT, Methoxychlor
Endrin aldehyde

CLP DATA ASSESSMENT

Difference (%D):

Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be < 30% and %D must be < ±30% (VOA) or ±25% (BNA). A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated, "J" and non-detects are flagged "UJ". If %RSD and %D grossly exceed QC criteria, non-detects data may be qualified "R".

For the PEST/PCB fraction, if %RSD exceeds 20% for all analytes except for the two surrogates (which must not exceed 30% RSD), qualify all associated positive results "J" and non-detects "UJ".

The following analytes in the sample shown were qualified for %RSD and %D:

PCB: No problems.

8. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must not vary by more than a factor of 2 (-50% to +100%) from the associated continuing calibration standard. The retention time of the internal standard must not vary more than ±30 seconds from the associated continuing calibration standard. If the area count is outside the (-50% to +100%) range of the associated standard, all of the positive results for compounds quantitated using that IS are qualified as estimated, "J", and all non-detects as "UJ", or "R" if there is a severe loss of sensitivity.

If an internal standard retention time varies by more than 30 seconds, the reviewer will use professional judgement to determine either partial or total rejection of the data for that sample fraction.

PCB: No problems.

9. COMPOUND IDENTIFICATION:

Percent Moisture Report

SDG NO: BWZ67 LABORATORY: SWL-TULSA

CASE NO: 27133 AGENCY INPUT FILE: BWZ67.ASF

PERCENT MOISTURE LIMITS

	Primary	Expanded
PES	50%	90%

DC-184: Percent moisture content of the following pesticide soil samples exceeds primary criteria.
Hits are qualified "J" and non-detects are qualified "UJ".

BWZ80, BWZ80DL, BWZ82, BWZ82DL, BWZ86, BWZ86DL
BWZ87, BWZ87DL

CLP DATA ASSESSMENT

contaminant level (10 times for common contaminants), the analytes are qualified as non-detects, "U". The following analytes in the sample shown were qualified with "U" for these reasons:

A) Method blank contamination:
PCB: No problems.

B) Field or rinse blank contamination:
PCB: No problems.

5. MASS SPECTROMETER TUNING:

Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is (BFB) Bromofluorobenzene and for semi-volatiles Decafluorotriphenyl-phosphine (DFTPP).

If the mass calibration is in error, all associated data will be classified as unusable "R".
PCB: No problems.

6. CALIBRATION:

Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:

The response factor measures the instrument's response to specific chemical compounds. The response factor for the Target Compound List (TCL) must be ≥ 0.05 in both initial and continuing calibrations. A value < 0.05 indicates a serious detection and quantitation problem (poor sensitivity). Analytes detected in the sample will be qualified as estimated, "J". All non-detects for that compound will be rejected "R".

B) Percent Relative Standard Deviation (%RSD) and Percent

CLP DATA ASSESSMENT

SDG 1, BWZ67: PCB ONLY

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded.

The following action was taken in the samples and analytes shown due to excessive holding time.
PCB: The following samples were qualified "J" for hits and "UJ" for non-detects due to the sample exceeding % moisture criteria: BWZ80, BWZ80DL, BWZ82, BWZ82DL, BWZ86, BWZ86DL, BWZ87, and BWZ87DL.

2. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate concentrations were outside contract specifications, qualifications were applied to the samples and analytes as shown below.
PCB: No problems.

3. LABORATORY CONTROL SAMPLE (LCS):

The LCS data is generated from a laboratory quality control sample. LCS data is intended to assess the ability of the contractor to perform the analytical method.
PCB: No problems.

4. BLANK CONTAMINATION:

Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. If the concentration of the analyte is less than 5 times the blank

CLP DATA ASSESSMENT

Functional Guidelines for Evaluating Organic Analysis

CASE No.: 27133 SDG No.: BWZ67
LABORATORY: SWOK SITE: Cornell Dubilier

DATA ASSESSMENT

The current SOP HW-6 (Revision 11) June 1996, USEPA Region II Data Validation SOP for Statement of Work OLMO 3.2 for evaluating organic data have been applied.

All data are valid and acceptable except those analytes rejected "R"(unusable). Due to the detection of QC problems, some analytes may have the "J" (estimated), "N"(presumptive evidence for the presence of the material, "U" (non-detect) or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer's
Signature: Mark Zambrowski Date: July 21, 1999

Verified By: _____ Date: ____/____/199__

	YES	NO	N/A
13.0 Field Duplicates			
13.1 Were any field duplicates submitted?	/		

ACTION: Compare the reported results for field duplicates and calculate the relative percent difference.

ACTION: Any gross variation between field duplicate results must be addressed in the reviewer narrative. However, if large differences exist, identification of field duplicates should be confirmed by contacting the sampler.

BWZ86/BWZ87

RECEIVED
JUL 14 1999

SOUTHWEST LABORATORY OF OKLAHOMA
(SWL-TULSA)
1700 West Albany, Suite A/ Broken Arrow, OK 74012
918-251-2858

SDG NARRATIVE

CONTRACT: 68-D5-0026

CASE NO: 27133

SDG NO: BWZ67

SAMPLES: BWZ67, BWZ69, BWZ70, BWZ71, BWZ72, BWZ73, BWZ74, BWZ75, BWZ76, BWZ77, BWZ78, BWZ79, BWZ80, BWZ81, BWZ82, BWZ83, BWZ85, BWZ86, BWZ87, BWZ88, BWZ67DL, BWZ69DL, BWZ70DL, BWZ71DL, BWZ72DL, BWZ73DL, BWZ74DL, BWZ75DL, BWZ76DL, BWZ77DL, BWZ78DL, BWZ79DL, BWZ80DL, BWZ81DL, BWZ82DL, BWZ83DL, BWZ85DL, BWZ86DL, BWZ87DL, BWZ88DL

FRACTION: Pesticide/PCB

This SDG consisted of 20 soil samples that were analyzed for pesticide/PCBs, by EPA SOW OLM03.2. The samples were analyzed on Restek dual analytical columns, RTX-PEST and RTX-PEST2 (the phases of both columns are proprietary). These columns were specifically designed for pesticide/PCB separation as required by the EPA's SOW. All applicable manufacturer's instructions were followed for the analysis of pesticides/PCBs. Manufacturer provided information on the performance characteristics of the columns are kept on site. Hydrogen was used as the carrier gas for all instruments except HP-6 and HP-8 (helium). The temperature of the cooler(s) was noted at 3 ° C.

The matrix of these soil samples caused problems with their analysis by introducing interference peaks in the sample chromatograms and degrading instrument performance. All of the samples also contained degraded arochlor patterns. It should be noted that when multi-responding compounds and/or large numbers of "interference" peaks are present in a sample, false positives of single response compounds are common. Since ECD detection is not a definitive means of detection, single-response analytes in the presence of multi-responders or interference will be reported, per the method, if a peak is within a target analyte's retention time window on both columns, then it is reported as that target analyte). This alleviates the possibility that false negative results will be reported. <u>However, this may lead to false positives</u>. The end data user should be aware of the limitations of the method and take appropriate care.

When analyzed at a 10x dilution the samples in this SDG caused breakdown of 4,4'-DDT in the calibration verification standards following their injection. The calibration verification standards analyzed before these samples met OLM03.2 continuing calibration criteria. When diluted 100X the samples met OLM03.2 acceptance criteria.

A non-compliant 10x dilution analysis and a compliant 100x dilution analysis was performed for these samples. Forms for the compliant and non-compliant data have been submitted.

Blanks: No corrective action required.

Surrogates: No corrective action required.

Matrix Spikes: No corrective action required. 8 out of 12 recoveries were outside of control limits due to matrix interference. The raw data for the 100x dilution analysis of the matrix spikes was included as miscellaneous data.

The following tables list the total nanograms injected on column for each calibration standard based upon amount injected, 0.5µL, 1µL, or 2µL:

RESOLUTION CHECK

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
gamma-Chlordane	0.005	0.01	0.02
Endosulfan I	0.005	0.01	0.02
4,4'-DDE	0.01	0.02	0.04
Dieldrin	0.01	0.02	0.04
Endosulfan Sulfate	0.01	0.02	0.04
Endrin Ketone	0.01	0.02	0.04
Methoxychlor	0.5	0.1	0.2
Tetrachloro-m-xylene	0.01	0.02	0.04
Decachlorobiphenyl	0.01	0.02	0.04

PERFORMANCE EVALUATION

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
gamma-BHC	0.005	0.01	0.02
alpha-BHC	0.005	0.01	0.02
4,4'-DDT	0.05	0.1	.02
beta-BHC	0.005	0.01	0.02
Endrin	0.025	0.05	0.1
Methoxychlor	0.125	0.25	0.5
Tetrachloro-m-xylene	0.01	0.02	0.04
Decachlorobiphenyl	0.01	0.02	0.04

INDIVIDUAL STANDARD MIXTURE A -- LOW

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
alpha-BHC	0.0025	0.005	0.01
Heptachlor	0.0025	0.005	0.01
gamma-BHC	0.0025	0.005	0.01
Endosulfan I	0.0025	0.005	0.01
Dieldrin	0.005	0.01	0.02
Endrin	0.005	0.01	0.02
4,4'-DDD	0.005	0.01	0.02
4,4'-DDT	0.005	0.01	0.02
Methoxychlor	0.025	0.05	0.1
Tetrachloro-m-xylene	0.0025	0.005	0.01
Decachlorobiphenyl	0.005	0.01	0.02

INDIVIDUAL STANDARD MIXTURE B -- LOW

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
beta-BHC	0.0025	0.005	0.01
delta-BHC	0.0025	0.005	0.01
Aldrin	0.0025	0.005	0.01
Heptachlor epoxide	0.0025	0.005	0.01
alpha-Chlordane	0.0025	0.005	0.01
gamma-Chlordane	0.0025	0.005	0.01
4,4'-DDE	0.005	0.01	0.02
Endosulfan sulfate	0.005	0.01	0.02
Endrin aldehyde	0.005	0.01	0.02
Endrin ketone	0.005	0.01	0.02
Endosulfan II	0.005	0.01	0.02
Tetrachloro-m-xylene	0.0025	0.005	0.01
Decachlorobiphenyl	0.005	0.01	0.02

INDIVIDUAL STANDARD MIXTURE A -- MEDIUM

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
alpha-BHC	0.01	0.02	0.04
Heptachlor	0.01	0.02	0.04
gamma-BHC	0.01	0.02	0.04
Endosulfan I	0.01	0.02	0.04
Dieldrin	0.02	0.04	0.08
Endrin	0.02	0.04	0.08
4,4'-DDD	0.02	0.04	0.08
4,4'-DDT	0.02	0.04	0.08
Methoxychlor	0.1	0.2	0.4
Tetrachloro-m-xylene	0.01	0.02	0.04
Decachlorobiphenyl	0.02	0.04	0.08

INDIVIDUAL STANDARD MIXTURE B -- MEDIUM

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
beta-BHC	0.01	0.02	0.04
delta-BHC	0.01	0.02	0.04
Aldrin	0.01	0.02	0.04
Heptachlor epoxide	0.01	0.02	0.04
alpha-Chlordane	0.01	0.02	0.04
gamma-Chlordane	0.01	0.02	0.04
4,4'-DDE	0.02	0.04	0.08
Endosulfan sulfate	0.02	0.04	0.08
Endrin aldehyde	0.02	0.04	0.08
Endrin ketone	0.02	0.04	0.08
Endosulfan II	0.02	0.04	0.08
Tetrachloro-m-xylene	0.01	0.02	0.04
Decachlorobiphenyl	0.02	0.04	0.08

INDIVIDUAL STANDARD MIXTURE A -- HIGH

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
alpha-BHC	0.04	0.08	0.16
Heptachlor	0.04	0.08	0.16
gamma-BHC	0.04	0.08	0.16
Endosulfan I	0.04	0.08	0.16
Dieldrin	0.08	0.16	0.32
Endrin	0.08	0.16	0.32
4,4'-DDD	0.08	0.16	0.32
4,4'-DDT	0.08	0.16	0.32
Methoxychlor	0.4	0.8	1.6
Tetrachloro-m-xylene	0.04	0.08	0.16
Decachlorobiphenyl	0.08	0.16	0.32

INDIVIDUAL STANDARD MIXTURE B -- HIGH

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
beta-BHC	0.04	0.08	0.16
delta-BHC	0.04	0.08	0.16
Aldrin	0.04	0.08	0.16
Heptachlor epoxide	0.04	0.08	0.16
alpha-Chlordane	0.04	0.08	0.16
gamma-Chlordane	0.04	0.08	0.16
4,4'-DDE	0.08	0.16	0.32
Endosulfan sulfate	0.08	0.16	0.32
Endrin aldehyde	0.08	0.16	0.32
Endrin ketone	0.08	0.16	0.32
Endosulfan II	0.08	0.16	0.32
Tetrachloro-m-xylene	0.04	0.08	0.16
Decachlorobiphenyl	0.08	0.16	0.32

MULTI-RESPONSE STANDARD MIXTURES

Compounds	Total nanograms (0.5µL)	Total nanograms (1µL)	Total nanograms (2µL)
Aroclor-1016	0.05	0.1	0.2
Aroclor-1221	0.1	0.2	0.4
Aroclor-1232	0.05	0.1	0.2
Aroclor-1242	0.05	0.1	0.2
Aroclor-1248	0.05	0.1	0.2
Aroclor-1254	0.05	0.1	0.2
Aroclor-1260	0.05	0.1	0.2
Toxaphene	0.25	0.5	1.0

All manual integrations in this data package for GC/EC have been performed for one of the following reasons:

a. Data system missed a peak during processing.
b. Data system improperly integrated a peak.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on diskette has been authorized by the Laboratory Manager or his designee, as verified by the following signature.

Drew Cowan
GC Supervisor
Dc

July 12, 1999

SAMPLE DELIVERY GROUP (SDG)
TRAFFIC REPORT (TR) COVER SHEET

LAB NAME: SOUTHWEST LABORATORY OF OKLAHOMA CONTRACT NO.: 68-D5-0026

LAB CODE: SWOK CASE NO.: 27133 SAS NO.:

FULL SAMPLE ANALYSIS PRICE IN CONTRACT:

SDG No./First Sample in SDG: (Lowest EPA Sample Number in first shipment of samples received under SDG). BWZ67 Sample Receipt Date: 06/24/99 (MM/DD/YY)

Last Sample in SDG: (Highest EPA Sample Number in last shipment of samples received under SDG). BWZ88 Sample Receipt Date: 06/24/99

EPA Sample Numbers in the SDG (listed in alphanumeric order):

1) BWZ67	11) BWZ78
2) BWZ69	12) BWZ79
3) BWZ70	13) BWZ80
4) BWZ71	14) BWZ81
5) BWZ72	15) BWZ82
6) BWZ73	16) BWZ83
7) BWZ74	17) BWZ85
8) BWZ75	18) BWZ86
9) BWZ76	19) BWZ87
10) BWZ77	20) BWZ88

Note: There are a maximum of 20 field samples in a SDG.

Attach Traffic Reports to this form in alphanumeric order (i.e., the order listed on this form).

001E

Sample Custodian

6-28-99
Date

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ67

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.04

Sample wt/vol: 32.4 (g/mL) G Lab File ID: _____

% Moisture: 23 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 4.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	20	U
319-85-7	beta-BHC	20	U
319-86-8	delta-BHC	20	U
58-89-9	gamma-BHC (Lindane)	20	U
76-44-8	Heptachlor	20	U
309-00-2	Aldrin	20	U
1024-57-3	Heptachlor epoxide	13	PJ
959-98-8	Endosulfan I	20	U
60-57-1	Dieldrin	160	P
72-55-9	4,4'-DDE	130	
72-20-8	Endrin	40	U
33213-65-9	Endosulfan II	37	PJ
72-54-8	4,4'-DDD	42	P
1031-07-8	Endosulfan sulfate	100	P
50-29-3	4,4'-DDT	40	U
72-43-5	Methoxychlor	65	PJ
53494-70-5	Endrin ketone	40	U
7421-93-4	Endrin aldehyde	82	P
5103-71-9	alpha-Chlordane	160	P
5103-74-2	gamma-Chlordane	210	P
8001-35-2	Toxaphene	2000	U
12674-11-2	Aroclor-1016	400	U
11104-28-2	Aroclor-1221	800	U
11141-16-5	Aroclor-1232	400	U
53469-21-9	Aroclor-1242	400	U
12672-29-6	Aroclor-1248	400	U
11097-69-1	Aroclor-1254	4500	
11096-82-5	Aroclor-1260	400	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ67DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.04DL

Sample wt/vol: 32.4 (g/mL) G Lab File ID: _____

% Moisture: 23 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 4.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	200	U
319-85-7	beta-BHC	200	U
319-86-8	delta-BHC	200	U
58-89-9	gamma-BHC (Lindane)	200	U
76-44-8	Heptachlor	200	U
309-00-2	Aldrin	200	U
1024-57-3	Heptachlor epoxide	200	U
959-98-8	Endosulfan I	200	U
60-57-1	Dieldrin	180	DPJ
72-55-9	4,4'-DDE	150	DPJ
72-20-8	Endrin	400	U
33213-65-9	Endosulfan II	400	U
72-54-8	4,4'-DDD	400	U
1031-07-8	Endosulfan sulfate	97	DPJ
50-29-3	4,4'-DDT	400	U
72-43-5	Methoxychlor	2000	U
53494-70-5	Endrin ketone	400	U
7421-93-4	Endrin aldehyde	180	DJ
5103-71-9	alpha-Chlordane	280	D
5103-74-2	gamma-Chlordane	250	DP
8001-35-2	Toxaphene	20000	U
12674-11-2	Aroclor-1016	4000	U
11104-28-2	Aroclor-1221	8000	U
11141-16-5	Aroclor-1232	4000	U
53469-21-9	Aroclor-1242	4000	U
12672-29-6	Aroclor-1248	4000	U
11097-69-1	Aroclor-1254	6600	D
11096-82-5	Aroclor-1260	4000	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ69

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.06

Sample wt/vol: 31.3 (g/mL) G Lab File ID: _____

% Moisture: 26 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22	U
319-85-7	beta-BHC	22	U
319-86-8	delta-BHC	22	U
58-89-9	gamma-BHC (Lindane)	22	U
76-44-8	Heptachlor	22	U
309-00-2	Aldrin	22	U
1024-57-3	Heptachlor epoxide	22	U
959-98-8	Endosulfan I	22	U
60-57-1	Dieldrin	140	P
72-55-9	4,4'-DDE	110	
72-20-8	Endrin	43	U
33213-65-9	Endosulfan II	29	PJ
72-54-8	4,4'-DDD	32	PJ
1031-07-8	Endosulfan sulfate	88	
50-29-3	4,4'-DDT	46	P
72-43-5	Methoxychlor	44	PJ
53494-70-5	Endrin ketone	43	U
7421-93-4	Endrin aldehyde	55	P
5103-71-9	alpha-Chlordane	120	P
5103-74-2	gamma-Chlordane	150	P
8001-35-2	Toxaphene	2200	U
12674-11-2	Aroclor-1016	430	U
11104-28-2	Aroclor-1221	870	U
11141-16-5	Aroclor-1232	430	U
53469-21-9	Aroclor-1242	430	U
12672-29-6	Aroclor-1248	430	U
11097-69-1	Aroclor-1254	3700	
11096-82-5	Aroclor-1260	430	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ69DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.06DL

Sample wt/vol: 31.3 (g/mL) G Lab File ID: _____

% Moisture: 26 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	220	U
319-85-7	beta-BHC	220	U
319-86-8	delta-BHC	220	U
58-89-9	gamma-BHC (Lindane)	220	U
76-44-8	Heptachlor	220	U
309-00-2	Aldrin	220	U
1024-57-3	Heptachlor epoxide	220	U
959-98-8	Endosulfan I	220	U
60-57-1	Dieldrin	160	DPJ
72-55-9	4,4'-DDE	430	U
72-20-8	Endrin	430	U
33213-65-9	Endosulfan II	430	U
72-54-8	4,4'-DDD	430	U
1031-07-8	Endosulfan sulfate	90	DPJ
50-29-3	4,4'-DDT	430	U
72-43-5	Methoxychlor	2200	U
53494-70-5	Endrin ketone	430	U
7421-93-4	Endrin aldehyde	80	DPJ
5103-71-9	alpha-Chlordane	200	DJ
5103-74-2	gamma-Chlordane	240	DP
8001-35-2	Toxaphene	22000	U
12674-11-2	Aroclor-1016	4300	U
11104-28-2	Aroclor-1221	8700	U
11141-16-5	Aroclor-1232	4300	U
53469-21-9	Aroclor-1242	4300	U
12672-29-6	Aroclor-1248	4300	U
11097-69-1	Aroclor-1254	6300	U
11096-82-5	Aroclor-1260	4300	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ70

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.07

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 47 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	32	U
319-85-7	beta-BHC	32	U
319-86-8	delta-BHC	32	U
58-89-9	gamma-BHC (Lindane)	32	U
76-44-8	Heptachlor	32	U
309-00-2	Aldrin	32	U
1024-57-3	Heptachlor epoxide	32	U
959-98-8	Endosulfan I	32	U
60-57-1	Dieldrin	150	P
72-55-9	4,4'-DDE	120	
72-20-8	Endrin	62	U
33213-65-9	Endosulfan II	33	PJ
72-54-8	4,4'-DDD	37	PJ
1031-07-8	Endosulfan sulfate	87	
50-29-3	4,4'-DDT	48	PJ
72-43-5	Methoxychlor	320	U
53494-70-5	Endrin ketone	62	U
7421-93-4	Endrin aldehyde	39	PJ
5103-71-9	alpha-Chlordane	140	P
5103-74-2	gamma-Chlordane	170	P
8001-35-2	Toxaphene	3200	U
12674-11-2	Aroclor-1016	620	U
11104-28-2	Aroclor-1221	1200	U
11141-16-5	Aroclor-1232	620	U
53469-21-9	Aroclor-1242	620	U
12672-29-6	Aroclor-1248	620	U
11097-69-1	Aroclor-1254	3800	
11096-82-5	Aroclor-1260	620	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ70DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.07DL

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 47 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	320	U
319-85-7	beta-BHC	320	U
319-86-8	delta-BHC	320	U
58-89-9	gamma-BHC (Lindane)	320	U
76-44-8	Heptachlor	320	U
309-00-2	Aldrin	320	U
1024-57-3	Heptachlor epoxide	320	U
959-98-8	Endosulfan I	320	U
60-57-1	Dieldrin	620	U
72-55-9	4,4'-DDE	620	U
72-20-8	Endrin	620	U
33213-65-9	Endosulfan II	620	U
72-54-8	4,4'-DDD	620	U
1031-07-8	Endosulfan sulfate	620	U
50-29-3	4,4'-DDT	620	U
72-43-5	Methoxychlor	3200	U
53494-70-5	Endrin ketone	620	U
7421-93-4	Endrin aldehyde	620	U
5103-71-9	alpha-Chlordane	230	DJ
5103-74-2	gamma-Chlordane	260	DPJ
8001-35-2	Toxaphene	32000	U
12674-11-2	Aroclor-1016	6200	U
11104-28-2	Aroclor-1221	12000	U
11141-16-5	Aroclor-1232	6200	U
53469-21-9	Aroclor-1242	6200	U
12672-29-6	Aroclor-1248	6200	U
11097-69-1	Aroclor-1254	6100	DJ
11096-82-5	Aroclor-1260	6200	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ71

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.08

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 23 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22	U
319-85-7	beta-BHC	22	U
319-86-8	delta-BHC	22	U
58-89-9	gamma-BHC (Lindane)	22	U
76-44-8	Heptachlor	22	U
309-00-2	Aldrin	22	U
1024-57-3	Heptachlor epoxide	11	PJ
959-98-8	Endosulfan I	22	U
60-57-1	Dieldrin	190	P
72-55-9	4,4'-DDE	150	
72-20-8	Endrin	42	U
33213-65-9	Endosulfan II	34	PJ
72-54-8	4,4'-DDD	38	PJ
1031-07-8	Endosulfan sulfate	120	
50-29-3	4,4'-DDT	64	P
72-43-5	Methoxychlor	51	PJ
53494-70-5	Endrin ketone	42	U
7421-93-4	Endrin aldehyde	68	P
5103-71-9	alpha-Chlordane	140	P
5103-74-2	gamma-Chlordane	190	P
8001-35-2	Toxaphene	2200	U
12674-11-2	Aroclor-1016	420	U
11104-28-2	Aroclor-1221	860	U
11141-16-5	Aroclor-1232	420	U
53469-21-9	Aroclor-1242	420	U
12672-29-6	Aroclor-1248	420	U
11097-69-1	Aroclor-1254	4900	
11096-82-5	Aroclor-1260	420	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ71DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.08DL

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 23 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	220	U
319-85-7	beta-BHC	220	U
319-86-8	delta-BHC	220	U
58-89-9	gamma-BHC (Lindane)	220	U
76-44-8	Heptachlor	220	U
309-00-2	Aldrin	220	U
1024-57-3	Heptachlor epoxide	220	U
959-98-8	Endosulfan I	220	U
60-57-1	Dieldrin	240	DJ
72-55-9	4,4'-DDE	170	DPJ
72-20-8	Endrin	420	U
33213-65-9	Endosulfan II	420	U
72-54-8	4,4'-DDD	420	U
1031-07-8	Endosulfan sulfate	110	DPJ
50-29-3	4,4'-DDT	420	U
72-43-5	Methoxychlor	2200	U
53494-70-5	Endrin ketone	420	U
7421-93-4	Endrin aldehyde	96	DPJ
5103-71-9	alpha-Chlordane	270	D
5103-74-2	gamma-Chlordane	310	DP
8001-35-2	Toxaphene	22000	U
12674-11-2	Aroclor-1016	4200	U
11104-28-2	Aroclor-1221	8600	U
11141-16-5	Aroclor-1232	4200	U
53469-21-9	Aroclor-1242	4200	U
12672-29-6	Aroclor-1248	4200	U
11097-69-1	Aroclor-1254	8300	~~D~~
11096-82-5	Aroclor-1260	4200	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ72

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.09

Sample wt/vol: 30.8 (g/mL) G Lab File ID: _____

% Moisture: 33 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	25	U
319-85-7	beta-BHC	25	U
319-86-8	delta-BHC	25	U
58-89-9	gamma-BHC (Lindane)	25	U
76-44-8	Heptachlor	25	U
309-00-2	Aldrin	25	U
1024-57-3	Heptachlor epoxide	25	U
959-98-8	Endosulfan I	25	U
60-57-1	Dieldrin	150	P
72-55-9	4,4'-DDE	120	
72-20-8	Endrin	48	U
33213-65-9	Endosulfan II	26	PJ
72-54-8	4,4'-DDD	29	PJ
1031-07-8	Endosulfan sulfate	86	
50-29-3	4,4'-DDT	47	PJ
72-43-5	Methoxychlor	44	PJ
53494-70-5	Endrin ketone	48	U
7421-93-4	Endrin aldehyde	37	PJ
5103-71-9	alpha-Chlordane	120	P
5103-74-2	gamma-Chlordane	150	P
8001-35-2	Toxaphene	2500	U
12674-11-2	Aroclor-1016	480	U
11104-28-2	Aroclor-1221	970	U
11141-16-5	Aroclor-1232	480	U
53469-21-9	Aroclor-1242	480	U
12672-29-6	Aroclor-1248	480	U
11097-69-1	Aroclor-1254	3800	
11096-82-5	Aroclor-1260	480	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ72DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.09DL

Sample wt/vol: 30.8 (g/mL) G Lab File ID: _____

% Moisture: 33 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	250	U
319-85-7	beta-BHC	250	U
319-86-8	delta-BHC	250	U
58-89-9	gamma-BHC (Lindane)	250	U
76-44-8	Heptachlor	250	U
309-00-2	Aldrin	250	U
1024-57-3	Heptachlor epoxide	250	U
959-98-8	Endosulfan I	250	U
60-57-1	Dieldrin	180	DPJ
72-55-9	4,4'-DDE	480	U
72-20-8	Endrin	480	U
33213-65-9	Endosulfan II	480	U
72-54-8	4,4'-DDD	480	U
1031-07-8	Endosulfan sulfate	480	U
50-29-3	4,4'-DDT	480	U
72-43-5	Methoxychlor	2500	U
53494-70-5	Endrin ketone	480	U
7421-93-4	Endrin aldehyde	81	DPJ
5103-71-9	alpha-Chlordane	230	DJ
5103-74-2	gamma-Chlordane	250	DP
8001-35-2	Toxaphene	25000	U
12674-11-2	Aroclor-1016	4800	U
11104-28-2	Aroclor-1221	9700	U
11141-16-5	Aroclor-1232	4800	U
53469-21-9	Aroclor-1242	4800	U
12672-29-6	Aroclor-1248	4800	U
11097-69-1	Aroclor-1254	6300	U
11096-82-5	Aroclor-1260	4800	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ73

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.10

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

% Moisture: 30 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	24	U
319-85-7	beta-BHC	24	U
319-86-8	delta-BHC	24	U
58-89-9	gamma-BHC (Lindane)	24	U
76-44-8	Heptachlor	24	U
309-00-2	Aldrin	24	U
1024-57-3	Heptachlor epoxide	10	PJ
959-98-8	Endosulfan I	24	U
60-57-1	Dieldrin	160	P
72-55-9	4,4'-DDE	150	
72-20-8	Endrin	47	U
33213-65-9	Endosulfan II	33	PJ
72-54-8	4,4'-DDD	37	PJ
1031-07-8	Endosulfan sulfate	110	
50-29-3	4,4'-DDT	57	P
72-43-5	Methoxychlor	50	PJ
53494-70-5	Endrin ketone	47	U
7421-93-4	Endrin aldehyde	69	P
5103-71-9	alpha-Chlordane	150	P
5103-74-2	gamma-Chlordane	180	P
8001-35-2	Toxaphene	2400	U
12674-11-2	Aroclor-1016	470	U
11104-28-2	Aroclor-1221	950	U
11141-16-5	Aroclor-1232	470	U
53469-21-9	Aroclor-1242	470	U
12672-29-6	Aroclor-1248	470	U
11097-69-1	Aroclor-1254	4400	
11096-82-5	Aroclor-1260	470	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ73DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.10DL

Sample wt/vol: 30.3 (g/mL) G Lab File ID: _____

% Moisture: 30 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/08/99

Injection Volume: 0.5 (uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	240	U
319-85-7	beta-BHC	240	U
319-86-8	delta-BHC	240	U
58-89-9	gamma-BHC (Lindane)	240	U
76-44-8	Heptachlor	240	U
309-00-2	Aldrin	240	U
1024-57-3	Heptachlor epoxide	240	U
959-98-8	Endosulfan I	240	U
60-57-1	Dieldrin	190	DPJ
72-55-9	4,4'-DDE	170	DPJ
72-20-8	Endrin	470	U
33213-65-9	Endosulfan II	470	U
72-54-8	4,4'-DDD	470	U
1031-07-8	Endosulfan sulfate	110	DPJ
50-29-3	4,4'-DDT	470	U
72-43-5	Methoxychlor	2400	U
53494-70-5	Endrin ketone	470	U
7421-93-4	Endrin aldehyde	130	DPJ
5103-71-9	alpha-Chlordane	260	D
5103-74-2	gamma-Chlordane	300	DP
8001-35-2	Toxaphene	24000	U
12674-11-2	Aroclor-1016	4700	U
11104-28-2	Aroclor-1221	9500	U
11141-16-5	Aroclor-1232	4700	U
53469-21-9	Aroclor-1242	4700	U
12672-29-6	Aroclor-1248	4700	U
11097-69-1	Aroclor-1254	7300	D
11096-82-5	Aroclor-1260	4700	U

ONLY PCB DATA WERE VALIDATED

070

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ74

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.11

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 18 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/10/99

Injection Volume: 0.5 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	21	U
319-85-7	beta-BHC	21	U
319-86-8	delta-BHC	21	U
58-89-9	gamma-BHC (Lindane)	21	U
76-44-8	Heptachlor	21	U
309-00-2	Aldrin	21	U
1024-57-3	Heptachlor epoxide	21	U
959-98-8	Endosulfan I	99	
60-57-1	Dieldrin	120	
72-55-9	4,4'-DDE	110	
72-20-8	Endrin	66	P
33213-65-9	Endosulfan II	40	U
72-54-8	4,4'-DDD	40	U
1031-07-8	Endosulfan sulfate	69	P
50-29-3	4,4'-DDT	52	P
72-43-5	Methoxychlor	210	U
53494-70-5	Endrin ketone	40	U
7421-93-4	Endrin aldehyde	77	P
5103-71-9	alpha-Chlordane	100	P
5103-74-2	gamma-Chlordane	130	P
8001-35-2	Toxaphene	2100	U
12674-11-2	Aroclor-1016	400	U
11104-28-2	Aroclor-1221	810	U
11141-16-5	Aroclor-1232	400	U
53469-21-9	Aroclor-1242	400	U
12672-29-6	Aroclor-1248	400	U
11097-69-1	Aroclor-1254	5200	
11096-82-5	Aroclor-1260	400	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ74DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.11DL

Sample wt/vol: 30.1 (g/mL) G Lab File ID: _____

% Moisture: 18 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/09/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	210	U
319-85-7	beta-BHC	210	U
319-86-8	delta-BHC	210	U
58-89-9	gamma-BHC (Lindane)	210	U
76-44-8	Heptachlor	210	U
309-00-2	Aldrin	210	U
1024-57-3	Heptachlor epoxide	210	U
959-98-8	Endosulfan I	150	DJ
60-57-1	Dieldrin	160	DJ
72-55-9	4,4'-DDE	120	DPJ
72-20-8	Endrin	82	DPJ
33213-65-9	Endosulfan II	400	U
72-54-8	4,4'-DDD	400	U
1031-07-8	Endosulfan sulfate	100	DPJ
50-29-3	4,4'-DDT	400	U
72-43-5	Methoxychlor	2100	U
53494-70-5	Endrin ketone	400	U
7421-93-4	Endrin aldehyde	110	DPJ
5103-71-9	alpha-Chlordane	140	DPJ
5103-74-2	gamma-Chlordane	170	DPJ
8001-35-2	Toxaphene	21000	U
12674-11-2	Aroclor-1016	4000	U
11104-28-2	Aroclor-1221	8100	U
11141-16-5	Aroclor-1232	4000	U
53469-21-9	Aroclor-1242	4000	U
12672-29-6	Aroclor-1248	4000	U
11097-69-1	Aroclor-1254	5900	D
11096-82-5	Aroclor-1260	4000	U

ONLY PCB DATA WERE VALIDATED

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ75

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.12

Sample wt/vol: 31.0 (g/mL) G Lab File ID: _____

% Moisture: 30 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/10/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	24	U
319-85-7	beta-BHC	24	U
319-86-8	delta-BHC	24	U
58-89-9	gamma-BHC (Lindane)	24	U
76-44-8	Heptachlor	24	U
309-00-2	Aldrin	24	U
1024-57-3	Heptachlor epoxide	24	U
959-98-8	Endosulfan I	130	
60-57-1	Dieldrin	160	
72-55-9	4,4'-DDE	140	
72-20-8	Endrin	130	P
33213-65-9	Endosulfan II	33	PJ
72-54-8	4,4'-DDD	36	PJ
1031-07-8	Endosulfan sulfate	100	P
50-29-3	4,4'-DDT	55	P
72-43-5	Methoxychlor	46	J
53494-70-5	Endrin ketone	46	U
7421-93-4	Endrin aldehyde	69	P
5103-71-9	alpha-Chlordane	130	P
5103-74-2	gamma-Chlordane	180	P
8001-35-2	Toxaphene	2400	U
12674-11-2	Aroclor-1016	460	U
11104-28-2	Aroclor-1221	930	U
11141-16-5	Aroclor-1232	460	U
53469-21-9	Aroclor-1242	460	U
12672-29-6	Aroclor-1248	460	U
11097-69-1	Aroclor-1254	5800	
11096-82-5	Aroclor-1260	460	U

ONLY PCB DATA WERE VALIDATED

086

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ75DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.12DL

Sample wt/vol: 31.0 (g/mL) G Lab File ID: _____

% Moisture: 30 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/09/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	240	U
319-85-7	beta-BHC	240	U
319-86-8	delta-BHC	240	U
58-89-9	gamma-BHC (Lindane)	240	U
76-44-8	Heptachlor	240	U
309-00-2	Aldrin	240	U
1024-57-3	Heptachlor epoxide	26	DPJ
959-98-8	Endosulfan I	240	D
60-57-1	Dieldrin	200	DJ
72-55-9	4,4'-DDE	150	DPJ
72-20-8	Endrin	28	DPJ
33213-65-9	Endosulfan II	460	U
72-54-8	4,4'-DDD	460	U
1031-07-8	Endosulfan sulfate	120	DPJ
50-29-3	4,4'-DDT	460	U
72-43-5	Methoxychlor	2400	U
53494-70-5	Endrin ketone	460	U
7421-93-4	Endrin aldehyde	140	DPJ
5103-71-9	alpha-Chlordane	240	D
5103-74-2	gamma-Chlordane	240	DP
8001-35-2	Toxaphene	24000	U
12674-11-2	Aroclor-1016	4600	U
11104-28-2	Aroclor-1221	9300	U
11141-16-5	Aroclor-1232	4600	U
53469-21-9	Aroclor-1242	4600	U
12672-29-6	Aroclor-1248	4600	U
11097-69-1	Aroclor-1254	7700	~~D~~
11096-82-5	Aroclor-1260	4600	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ76

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.13

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 29 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/10/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 4.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	24	U
319-85-7	beta-BHC	24	U
319-86-8	delta-BHC	24	U
58-89-9	gamma-BHC (Lindane)	24	U
76-44-8	Heptachlor	24	U
309-00-2	Aldrin	24	U
1024-57-3	Heptachlor epoxide	24	U
959-98-8	Endosulfan I	120	
60-57-1	Dieldrin	160	
72-55-9	4,4'-DDE	140	
72-20-8	Endrin	130	P
33213-65-9	Endosulfan II	46	U
72-54-8	4,4'-DDD	46	U
1031-07-8	Endosulfan sulfate	110	P
50-29-3	4,4'-DDT	57	P
72-43-5	Methoxychlor	53	J
53494-70-5	Endrin ketone	46	U
7421-93-4	Endrin aldehyde	78	P
5103-71-9	alpha-Chlordane	140	P
5103-74-2	gamma-Chlordane	130	P
8001-35-2	Toxaphene	2400	U
12674-11-2	Aroclor-1016	460	U
11104-28-2	Aroclor-1221	940	U
11141-16-5	Aroclor-1232	460	U
53469-21-9	Aroclor-1242	460	U
12672-29-6	Aroclor-1248	460	U
11097-69-1	Aroclor-1254	5900	
11096-82-5	Aroclor-1260	460	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ76DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.13DL

Sample wt/vol: 30.2 (g/mL) G Lab File ID: _____

% Moisture: 29 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/09/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 4.9 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	240	U
319-85-7	beta-BHC	240	U
319-86-8	delta-BHC	240	U
58-89-9	gamma-BHC (Lindane)	240	U
76-44-8	Heptachlor	240	U
309-00-2	Aldrin	240	U
1024-57-3	Heptachlor epoxide	26	DPJ
959-98-8	Endosulfan I	240	D
60-57-1	Dieldrin	220	DJ
72-55-9	4,4'-DDE	160	DPJ
72-20-8	Endrin	150	DPJ
33213-65-9	Endosulfan II	460	U
72-54-8	4,4'-DDD	460	U
1031-07-8	Endosulfan sulfate	130	DPJ
50-29-3	4,4'-DDT	460	U
72-43-5	Methoxychlor	2400	U
53494-70-5	Endrin ketone	460	U
7421-93-4	Endrin aldehyde	120	DPJ
5103-71-9	alpha-Chlordane	240	D
5103-74-2	gamma-Chlordane	280	DP
8001-35-2	Toxaphene	24000	U
12674-11-2	Aroclor-1016	4600	U
11104-28-2	Aroclor-1221	9400	U
11141-16-5	Aroclor-1232	4600	U
53469-21-9	Aroclor-1242	4600	U
12672-29-6	Aroclor-1248	4600	U
11097-69-1	Aroclor-1254	8100	D
11096-82-5	Aroclor-1260	4600	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ77

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.14

Sample wt/vol: 31.1 (g/mL) G Lab File ID: _____

% Moisture: 28 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/10/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	23	U
319-85-7	beta-BHC	23	U
319-86-8	delta-BHC	23	U
58-89-9	gamma-BHC (Lindane)	23	U
76-44-8	Heptachlor	23	U
309-00-2	Aldrin	23	U
1024-57-3	Heptachlor epoxide	23	U
959-98-8	Endosulfan I	100	P
60-57-1	Dieldrin	170	
72-55-9	4,4'-DDE	190	
72-20-8	Endrin	130	P
33213-65-9	Endosulfan II	32	PJ
72-54-8	4,4'-DDD	35	PJ
1031-07-8	Endosulfan sulfate	180	
50-29-3	4,4'-DDT	100	P
72-43-5	Methoxychlor	45	PJ
53494-70-5	Endrin ketone	44	U
7421-93-4	Endrin aldehyde	100	P
5103-71-9	alpha-Chlordane	100	P
5103-74-2	gamma-Chlordane	150	P
8001-35-2	Toxaphene	2300	U
12674-11-2	Aroclor-1016	440	U
11104-28-2	Aroclor-1221	900	U
11141-16-5	Aroclor-1232	440	U
53469-21-9	Aroclor-1242	440	U
12672-29-6	Aroclor-1248	440	U
11097-69-1	Aroclor-1254	7500	
11096-82-5	Aroclor-1260	440	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ77DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.14DL

Sample wt/vol: 31.1 (g/mL) G Lab File ID: _____

% Moisture: 28 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/09/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	230	U
319-85-7	beta-BHC	230	U
319-86-8	delta-BHC	230	U
58-89-9	gamma-BHC (Lindane)	230	U
76-44-8	Heptachlor	230	U
309-00-2	Aldrin	230	U
1024-57-3	Heptachlor epoxide	230	U
959-98-8	Endosulfan I	240	DP
60-57-1	Dieldrin	270	DJ
72-55-9	4,4'-DDE	210	DPJ
72-20-8	Endrin	68	DPJ
33213-65-9	Endosulfan II	440	U
72-54-8	4,4'-DDD	440	U
1031-07-8	Endosulfan sulfate	230	DPJ
50-29-3	4,4'-DDT	440	U
72-43-5	Methoxychlor	2300	U
53494-70-5	Endrin ketone	440	U
7421-93-4	Endrin aldehyde	200	DPJ
5103-71-9	alpha-Chlordane	230	D
5103-74-2	gamma-Chlordane	250	DP
8001-35-2	Toxaphene	23000	U
12674-11-2	Aroclor-1016	4400	U
11104-28-2	Aroclor-1221	9000	U
11141-16-5	Aroclor-1232	4400	U
53469-21-9	Aroclor-1242	4400	U
12672-29-6	Aroclor-1248	4400	U
11097-69-1	Aroclor-1254	11000	D
11096-82-5	Aroclor-1260	4400	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ78

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.15

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 26 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/10/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	23	U
319-85-7	beta-BHC	23	U
319-86-8	delta-BHC	23	U
58-89-9	gamma-BHC (Lindane)	23	U
76-44-8	Heptachlor	23	U
309-00-2	Aldrin	23	U
1024-57-3	Heptachlor epoxide	12	PJ
959-98-8	Endosulfan I	60	P
60-57-1	Dieldrin	110	
72-55-9	4,4'-DDE	95	
72-20-8	Endrin	140	
33213-65-9	Endosulfan II	34	PJ
72-54-8	4,4'-DDD	36	PJ
1031-07-8	Endosulfan sulfate	89	
50-29-3	4,4'-DDT	170	P
72-43-5	Methoxychlor	55	PJ
53494-70-5	Endrin ketone	44	U
7421-93-4	Endrin aldehyde	71	P
5103-71-9	alpha-Chlordane	170	P
5103-74-2	gamma-Chlordane	160	P
8001-35-2	Toxaphene	2300	U
12674-11-2	Aroclor-1016	440	U
11104-28-2	Aroclor-1221	890	U
11141-16-5	Aroclor-1232	440	U
53469-21-9	Aroclor-1242	440	U
12672-29-6	Aroclor-1248	440	U
11097-69-1	Aroclor-1254	4000	
11096-82-5	Aroclor-1260	440	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ78DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.15DL

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 26 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/09/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	230	U
319-85-7	beta-BHC	230	U
319-86-8	delta-BHC	230	U
58-89-9	gamma-BHC (Lindane)	230	U
76-44-8	Heptachlor	230	U
309-00-2	Aldrin	230	U
1024-57-3	Heptachlor epoxide	48	DJ
959-98-8	Endosulfan I	140	DPJ
60-57-1	Dieldrin	170	DPJ
72-55-9	4,4'-DDE	150	DJ
72-20-8	Endrin	220	DPJ
33213-65-9	Endosulfan II	440	U
72-54-8	4,4'-DDD	440	U
1031-07-8	Endosulfan sulfate	100	DPJ
50-29-3	4,4'-DDT	200	DPJ
72-43-5	Methoxychlor	2300	U
53494-70-5	Endrin ketone	440	U
7421-93-4	Endrin aldehyde	130	DPJ
5103-71-9	alpha-Chlordane	290	D
5103-74-2	gamma-Chlordane	220	DJ
8001-35-2	Toxaphene	23000	U
12674-11-2	Aroclor-1016	4400	U
11104-28-2	Aroclor-1221	8900	U
11141-16-5	Aroclor-1232	4400	U
53469-21-9	Aroclor-1242	4400	U
12672-29-6	Aroclor-1248	4400	U
11097-69-1	Aroclor-1254	5600	~~D~~
11096-82-5	Aroclor-1260	4400	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ79

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.16

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 33 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/10/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	25	U
319-85-7	beta-BHC	25	U
319-86-8	delta-BHC	25	U
58-89-9	gamma-BHC (Lindane)	25	U
76-44-8	Heptachlor	25	U
309-00-2	Aldrin	25	U
1024-57-3	Heptachlor epoxide	25	U
959-98-8	Endosulfan I	120	
60-57-1	Dieldrin	140	
72-55-9	4,4'-DDE	120	
72-20-8	Endrin	120	P
33213-65-9	Endosulfan II	29	PJ
72-54-8	4,4'-DDD	32	PJ
1031-07-8	Endosulfan sulfate	95	
50-29-3	4,4'-DDT	50	P
72-43-5	Methoxychlor	41	J
53494-70-5	Endrin ketone	49	U
7421-93-4	Endrin aldehyde	62	P
5103-71-9	alpha-Chlordane	120	P
5103-74-2	gamma-Chlordane	160	P
8001-35-2	Toxaphene	2500	U
12674-11-2	Aroclor-1016	490	U
11104-28-2	Aroclor-1221	1000	U
11141-16-5	Aroclor-1232	490	U
53469-21-9	Aroclor-1242	490	U
12672-29-6	Aroclor-1248	490	U
11097-69-1	Aroclor-1254	5000	
11096-82-5	Aroclor-1260	490	U

(ONLY PCB DATA WERE VALIDATED)

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ79DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.16DL

Sample wt/vol: 30.0 (g/mL) G Lab File ID: _____

% Moisture: 33 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/09/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	250	U
319-85-7	beta-BHC	250	U
319-86-8	delta-BHC	250	U
58-89-9	gamma-BHC (Lindane)	250	U
76-44-8	Heptachlor	250	U
309-00-2	Aldrin	250	U
1024-57-3	Heptachlor epoxide	250	U
959-98-8	Endosulfan I	210	DJ
60-57-1	Dieldrin	170	DPJ
72-55-9	4,4'-DDE	130	DPJ
72-20-8	Endrin	120	DPJ
33213-65-9	Endosulfan II	490	U
72-54-8	4,4'-DDD	490	U
1031-07-8	Endosulfan sulfate	110	DPJ
50-29-3	4,4'-DDT	490	U
72-43-5	Methoxychlor	2500	U
53494-70-5	Endrin ketone	490	U
7421-93-4	Endrin aldehyde	120	DPJ
5103-71-9	alpha-Chlordane	230	DJ
5103-74-2	gamma-Chlordane	220	DPJ
8001-35-2	Toxaphene	25000	U
12674-11-2	Aroclor-1016	4900	U
11104-28-2	Aroclor-1221	10000	U
11141-16-5	Aroclor-1232	4900	U
53469-21-9	Aroclor-1242	4900	U
12672-29-6	Aroclor-1248	4900	U
11097-69-1	Aroclor-1254	6900	U
11096-82-5	Aroclor-1260	4900	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ80

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.17

Sample wt/vol: 31.1 (g/mL) G Lab File ID: _____

% Moisture: 61 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/10/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	42	U
319-85-7	beta-BHC	42	U
319-86-8	delta-BHC	42	U
58-89-9	gamma-BHC (Lindane)	42	U
76-44-8	Heptachlor	42	U
309-00-2	Aldrin	42	U
1024-57-3	Heptachlor epoxide	42	U
959-98-8	Endosulfan I	76	P
60-57-1	Dieldrin	110	
72-55-9	4,4'-DDE	100	
72-20-8	Endrin	130	P
33213-65-9	Endosulfan II	33	PJ
72-54-8	4,4'-DDD	36	PJ
1031-07-8	Endosulfan sulfate	85	
50-29-3	4,4'-DDT	38	PJ
72-43-5	Methoxychlor	88	J
53494-70-5	Endrin ketone	82	U
7421-93-4	Endrin aldehyde	35	PJ
5103-71-9	alpha-Chlordane	220	P
5103-74-2	gamma-Chlordane	210	P
8001-35-2	Toxaphene	4200	U
12674-11-2	Aroclor-1016	820	U
11104-28-2	Aroclor-1221	1600	U
11141-16-5	Aroclor-1232	820	U
53469-21-9	Aroclor-1242	820	U
12672-29-6	Aroclor-1248	820	U
11097-69-1	Aroclor-1254	4200	
11096-82-5	Aroclor-1260	820	U

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ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ80DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.17DL

Sample wt/vol: 31.1 (g/mL) G Lab File ID: _____

% Moisture: 61 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000 (uL) Date Analyzed: 07/09/99

Injection Volume: 0.5 (uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	420	U
319-85-7	beta-BHC	420	U
319-86-8	delta-BHC	420	U
58-89-9	gamma-BHC (Lindane)	420	U
76-44-8	Heptachlor	420	U
309-00-2	Aldrin	420	U
1024-57-3	Heptachlor epoxide	420	U
959-98-8	Endosulfan I	130	DPJ
60-57-1	Dieldrin	120	DPJ
72-55-9	4,4'-DDE	100	DPJ
72-20-8	Endrin	120	DPJ
33213-65-9	Endosulfan II	820	U
72-54-8	4,4'-DDD	820	U
1031-07-8	Endosulfan sulfate	39	DPJ
50-29-3	4,4'-DDT	820	U
72-43-5	Methoxychlor	4200	U
53494-70-5	Endrin ketone	820	U
7421-93-4	Endrin aldehyde	93	DPJ
5103-71-9	alpha-Chlordane	400	DJ
5103-74-2	gamma-Chlordane	290	DPJ
8001-35-2	Toxaphene	42000	U
12674-11-2	Aroclor-1016	8200	U
11104-28-2	Aroclor-1221	16000	U
11141-16-5	Aroclor-1232	8200	U
53469-21-9	Aroclor-1242	8200	U
12672-29-6	Aroclor-1248	8200	U
11097-69-1	Aroclor-1254	4800	~~DJP~~
11096-82-5	Aroclor-1260	8200	U

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ONLY POS DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ81

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.18

Sample wt/vol: 30.5 (g/mL) G Lab File ID: _____

% Moisture: 26 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/10/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	22	U
319-85-7	beta-BHC	22	U
319-86-8	delta-BHC	22	U
58-89-9	gamma-BHC (Lindane)	22	U
76-44-8	Heptachlor	22	U
309-00-2	Aldrin	22	U
1024-57-3	Heptachlor epoxide	22	U
959-98-8	Endosulfan I	110	
60-57-1	Dieldrin	120	
72-55-9	4,4'-DDE	120	
72-20-8	Endrin	110	P
33213-65-9	Endosulfan II	29	PJ
72-54-8	4,4'-DDD	32	PJ
1031-07-8	Endosulfan sulfate	87	
50-29-3	4,4'-DDT	46	P
72-43-5	Methoxychlor	41	J
53494-70-5	Endrin ketone	44	U
7421-93-4	Endrin aldehyde	56	P
5103-71-9	alpha-Chlordane	110	P
5103-74-2	gamma-Chlordane	140	P
8001-35-2	Toxaphene	2200	U
12674-11-2	Aroclor-1016	440	U
11104-28-2	Aroclor-1221	890	U
11141-16-5	Aroclor-1232	440	U
53469-21-9	Aroclor-1242	440	U
12672-29-6	Aroclor-1248	440	U
11097-69-1	Aroclor-1254	4700	
11096-82-5	Aroclor-1260	440	U

ONLY RED DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ81DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.18DL

Sample wt/vol: 30.5 (g/mL) G Lab File ID: _____

% Moisture: 26 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/09/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	220	U
319-85-7	beta-BHC	220	U
319-86-8	delta-BHC	220	U
58-89-9	gamma-BHC (Lindane)	220	U
76-44-8	Heptachlor	220	U
309-00-2	Aldrin	220	U
1024-57-3	Heptachlor epoxide	220	U
959-98-8	Endosulfan I	190	DJ
60-57-1	Dieldrin	160	DJ
72-55-9	4,4'-DDE	120	DPJ
72-20-8	Endrin	29	DPJ
33213-65-9	Endosulfan II	440	U
72-54-8	4,4'-DDD	440	U
1031-07-8	Endosulfan sulfate	94	DPJ
50-29-3	4,4'-DDT	440	U
72-43-5	Methoxychlor	2200	U
53494-70-5	Endrin ketone	440	U
7421-93-4	Endrin aldehyde	100	DPJ
5103-71-9	alpha-Chlordane	190	DJ
5103-74-2	gamma-Chlordane	200	DPJ
8001-35-2	Toxaphene	22000	U
12674-11-2	Aroclor-1016	4400	U
11104-28-2	Aroclor-1221	8900	U
11141-16-5	Aroclor-1232	4400	U
53469-21-9	Aroclor-1242	4400	U
12672-29-6	Aroclor-1248	4400	U
11097-69-1	Aroclor-1254	6300	~~D~~
11096-82-5	Aroclor-1260	4400	U

ONLY PCB DATA HERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ82

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.19

Sample wt/vol: 30.5 (g/mL) G Lab File ID: _____

% Moisture: 55 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/10/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	37	U
319-85-7	beta-BHC	37	U
319-86-8	delta-BHC	37	U
58-89-9	gamma-BHC (Lindane)	37	U
76-44-8	Heptachlor	37	U
309-00-2	Aldrin	37	U
1024-57-3	Heptachlor epoxide	37	U
959-98-8	Endosulfan I	79	P
60-57-1	Dieldrin	120	
72-55-9	4,4'-DDE	100	
72-20-8	Endrin	140	
33213-65-9	Endosulfan II	45	PJ
72-54-8	4,4'-DDD	29	PJ
1031-07-8	Endosulfan sulfate	76	
50-29-3	4,4'-DDT	36	PJ
72-43-5	Methoxychlor	59	J
53494-70-5	Endrin ketone	72	U
7421-93-4	Endrin aldehyde	38	PJ
5103-71-9	alpha-Chlordane	250	P
5103-74-2	gamma-Chlordane	250	P
8001-35-2	Toxaphene	3700	U
12674-11-2	Aroclor-1016	720	U
11104-28-2	Aroclor-1221	1500	U
11141-16-5	Aroclor-1232	720	U
53469-21-9	Aroclor-1242	720	U
12672-29-6	Aroclor-1248	720	U
11097-69-1	Aroclor-1254	4100	
11096-82-5	Aroclor-1260	720	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ82DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.19DL

Sample wt/vol: 30.5 (g/mL) G Lab File ID: _____

% Moisture: 55 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/09/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.0 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	370	U
319-85-7	beta-BHC	370	U
319-86-8	delta-BHC	370	U
58-89-9	gamma-BHC (Lindane)	370	U
76-44-8	Heptachlor	370	U
309-00-2	Aldrin	370	U
1024-57-3	Heptachlor epoxide	370	U
959-98-8	Endosulfan I	150	DPJ
60-57-1	Dieldrin	160	DJ
72-55-9	4,4'-DDE	130	DJ
72-20-8	Endrin	140	DPJ
33213-65-9	Endosulfan II	720	U
72-54-8	4,4'-DDD	720	U
1031-07-8	Endosulfan sulfate	88	DJ
50-29-3	4,4'-DDT	720	U
72-43-5	Methoxychlor	3700	U
53494-70-5	Endrin ketone	720	U
7421-93-4	Endrin aldehyde	98	DPJ
5103-71-9	alpha-Chlordane	280	DPJ
5103-74-2	gamma-Chlordane	300	DPJ
8001-35-2	Toxaphene	37000	U
12674-11-2	Aroclor-1016	7200	U
11104-28-2	Aroclor-1221	15000	U
11141-16-5	Aroclor-1232	7200	U
53469-21-9	Aroclor-1242	7200	U
12672-29-6	Aroclor-1248	7200	U
11097-69-1	Aroclor-1254	5500	~~DJ~~
11096-82-5	Aroclor-1260	7200	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ83

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.20

Sample wt/vol: 32.5 (g/mL) G Lab File ID: _____

% Moisture: 19 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/10/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	19	U
319-85-7	beta-BHC	19	U
319-86-8	delta-BHC	19	U
58-89-9	gamma-BHC (Lindane)	19	U
76-44-8	Heptachlor	19	U
309-00-2	Aldrin	19	U
1024-57-3	Heptachlor epoxide	19	U
959-98-8	Endosulfan I	130	
60-57-1	Dieldrin	140	
72-55-9	4,4'-DDE	140	
72-20-8	Endrin	100	P
33213-65-9	Endosulfan II	29	PJ
72-54-8	4,4'-DDD	32	PJ
1031-07-8	Endosulfan sulfate	110	
50-29-3	4,4'-DDT	62	P
72-43-5	Methoxychlor	37	PJ
53494-70-5	Endrin ketone	38	U
7421-93-4	Endrin aldehyde	68	P
5103-71-9	alpha-Chlordane	120	P
5103-74-2	gamma-Chlordane	160	P
8001-35-2	Toxaphene	1900	U
12674-11-2	Aroclor-1016	380	U
11104-28-2	Aroclor-1221	760	U
11141-16-5	Aroclor-1232	380	U
53469-21-9	Aroclor-1242	380	U
12672-29-6	Aroclor-1248	380	U
11097-69-1	Aroclor-1254	5700	
11096-82-5	Aroclor-1260	380	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ83DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.20DL

Sample wt/vol: 32.5 (g/mL) G Lab File ID: _____

% Moisture: 19 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/09/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	190	U
319-85-7	beta-BHC	190	U
319-86-8	delta-BHC	190	U
58-89-9	gamma-BHC (Lindane)	190	U
76-44-8	Heptachlor	190	U
309-00-2	Aldrin	190	U
1024-57-3	Heptachlor epoxide	13	DPJ
959-98-8	Endosulfan I	220	D
60-57-1	Dieldrin	190	DJ
72-55-9	4,4'-DDE	140	DPJ
72-20-8	Endrin	110	DPJ
33213-65-9	Endosulfan II	380	U
72-54-8	4,4'-DDD	380	U
1031-07-8	Endosulfan sulfate	120	DPJ
50-29-3	4,4'-DDT	380	U
72-43-5	Methoxychlor	1900	U
53494-70-5	Endrin ketone	380	U
7421-93-4	Endrin aldehyde	120	DPJ
5103-71-9	alpha-Chlordane	220	D
5103-74-2	gamma-Chlordane	230	DP
8001-35-2	Toxaphene	19000	U
12674-11-2	Aroclor-1016	3800	U
11104-28-2	Aroclor-1221	7600	U
11141-16-5	Aroclor-1232	3800	U
53469-21-9	Aroclor-1242	3800	U
12672-29-6	Aroclor-1248	3800	U
11097-69-1	Aroclor-1254	7700	U
11096-82-5	Aroclor-1260	3800	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ85

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.22

Sample wt/vol: 31.1 (g/mL) G Lab File ID: _____

% Moisture: 34 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	25	U
319-85-7	beta-BHC	25	U
319-86-8	delta-BHC	25	U
58-89-9	gamma-BHC (Lindane)	25	U
76-44-8	Heptachlor	25	U
309-00-2	Aldrin	25	U
1024-57-3	Heptachlor epoxide	83	P
959-98-8	Endosulfan I	22	PJ
60-57-1	Dieldrin	200	P
72-55-9	4,4'-DDE	130	P
72-20-8	Endrin	61	
33213-65-9	Endosulfan II	48	U
72-54-8	4,4'-DDD	48	U
1031-07-8	Endosulfan sulfate	48	U
50-29-3	4,4'-DDT	580	P
72-43-5	Methoxychlor	250	U
53494-70-5	Endrin ketone	48	U
7421-93-4	Endrin aldehyde	34	PJ
5103-71-9	alpha-Chlordane	91	P
5103-74-2	gamma-Chlordane	93	PB
8001-35-2	Toxaphene	2500	U
12674-11-2	Aroclor-1016	480	U
11104-28-2	Aroclor-1221	980	U
11141-16-5	Aroclor-1232	480	U
53469-21-9	Aroclor-1242	480	U
12672-29-6	Aroclor-1248	480	U
11097-69-1	Aroclor-1254	2700	~~P~~
11096-82-5	Aroclor-1260	480	U

ONLY RED DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ85DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.22DL

Sample wt/vol: 31.1 (g/mL) G Lab File ID: _____

% Moisture: 34 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	250	U
319-85-7	beta-BHC	250	U
319-86-8	delta-BHC	250	U
58-89-9	gamma-BHC (Lindane)	250	U
76-44-8	Heptachlor	250	U
309-00-2	Aldrin	250	U
1024-57-3	Heptachlor epoxide	100	DPJ
959-98-8	Endosulfan I	250	U
60-57-1	Dieldrin	260	DPJ
72-55-9	4,4'-DDE	250	DJ
72-20-8	Endrin	79	DPJ
33213-65-9	Endosulfan II	480	U
72-54-8	4,4'-DDD	480	U
1031-07-8	Endosulfan sulfate	480	U
50-29-3	4,4'-DDT	980	D
72-43-5	Methoxychlor	2500	U
53494-70-5	Endrin ketone	480	U
7421-93-4	Endrin aldehyde	480	U
5103-71-9	alpha-Chlordane	180	DPJ
5103-74-2	gamma-Chlordane	93	DPJB
8001-35-2	Toxaphene	25000	U
12674-11-2	Aroclor-1016	4800	U
11104-28-2	Aroclor-1221	9800	U
11141-16-5	Aroclor-1232	4800	U
53469-21-9	Aroclor-1242	4800	U
12672-29-6	Aroclor-1248	4800	U
11097-69-1	Aroclor-1254	5200	D
11096-82-5	Aroclor-1260	4800	U

ONLY PCB DATA WERE VALIDATED

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ86

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.23

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 68 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	52	U
319-85-7	beta-BHC	52	U
319-86-8	delta-BHC	52	U
58-89-9	gamma-BHC (Lindane)	52	U
76-44-8	Heptachlor	52	U
309-00-2	Aldrin	52	U
1024-57-3	Heptachlor epoxide	100	P
959-98-8	Endosulfan I	52	U
60-57-1	Dieldrin	290	P
72-55-9	4,4'-DDE	140	P
72-20-8	Endrin	67	J
33213-65-9	Endosulfan II	49	PJ
72-54-8	4,4'-DDD	31	PJ
1031-07-8	Endosulfan sulfate	100	U
50-29-3	4,4'-DDT	720	
72-43-5	Methoxychlor	520	U
53494-70-5	Endrin ketone	100	U
7421-93-4	Endrin aldehyde	33	PJ
5103-71-9	alpha-Chlordane	240	P
5103-74-2	gamma-Chlordane	260	B
8001-35-2	Toxaphene	5200	U
12674-11-2	Aroclor-1016	1000	U
11104-28-2	Aroclor-1221	2100	U
11141-16-5	Aroclor-1232	1000	U
53469-21-9	Aroclor-1242	1000	U
12672-29-6	Aroclor-1248	1000	U
11097-69-1	Aroclor-1254	3700	
11096-82-5	Aroclor-1260	1000	U

ONLY PCB DATA WERE VALIDATED

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ86DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.23DL

Sample wt/vol: 30.4 (g/mL) G Lab File ID: _____

% Moisture: 68 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	520	U
319-85-7	beta-BHC	520	U
319-86-8	delta-BHC	520	U
58-89-9	gamma-BHC (Lindane)	520	U
76-44-8	Heptachlor	520	U
309-00-2	Aldrin	520	U
1024-57-3	Heptachlor epoxide	120	DPJ
959-98-8	Endosulfan I	520	U
60-57-1	Dieldrin	340	DPJ
72-55-9	4,4'-DDE	250	DPJ
72-20-8	Endrin	1000	U
33213-65-9	Endosulfan II	1000	U
72-54-8	4,4'-DDD	1000	U
1031-07-8	Endosulfan sulfate	1000	U
50-29-3	4,4'-DDT	1200	D
72-43-5	Methoxychlor	5200	U
53494-70-5	Endrin ketone	1000	U
7421-93-4	Endrin aldehyde	1000	U
5103-71-9	alpha-Chlordane	400	DPJ
5103-74-2	gamma-Chlordane	270	DPJB
8001-35-2	Toxaphene	52000	U
12674-11-2	Aroclor-1016	10000	U
11104-28-2	Aroclor-1221	21000	U
11141-16-5	Aroclor-1232	10000	U
53469-21-9	Aroclor-1242	10000	U
12672-29-6	Aroclor-1248	10000	U
11097-69-1	Aroclor-1254	5500	~~DJ~~
11096-82-5	Aroclor-1260	10000	U

ONLY PCB DATA WERE VALIDATED

200

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ87

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.24

Sample wt/vol: 32.4 (g/mL) G Lab File ID: _____

% Moisture: 68 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	49	U
319-85-7	beta-BHC	49	U
319-86-8	delta-BHC	49	U
58-89-9	gamma-BHC (Lindane)	49	U
76-44-8	Heptachlor	49	U
309-00-2	Aldrin	49	U
1024-57-3	Heptachlor epoxide	95	P
959-98-8	Endosulfan I	49	U
60-57-1	Dieldrin	260	P
72-55-9	4,4'-DDE	130	P
72-20-8	Endrin	60	J
33213-65-9	Endosulfan II	41	PJ
72-54-8	4,4'-DDD	37	PJ
1031-07-8	Endosulfan sulfate	95	U
50-29-3	4,4'-DDT	630	P
72-43-5	Methoxychlor	490	U
53494-70-5	Endrin ketone	95	U
7421-93-4	Endrin aldehyde	31	PJ
5103-71-9	alpha-Chlordane	230	P
5103-74-2	gamma-Chlordane	260	B
8001-35-2	Toxaphene	4900	U
12674-11-2	Aroclor-1016	950	U
11104-28-2	Aroclor-1221	1900	U
11141-16-5	Aroclor-1232	950	U
53469-21-9	Aroclor-1242	950	U
12672-29-6	Aroclor-1248	950	U
11097-69-1	Aroclor-1254	3200	
11096-82-5	Aroclor-1260	950	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ87DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.24DL

Sample wt/vol: 32.4 (g/mL) G Lab File ID: _____

% Moisture: 68 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.1 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	490	U
319-85-7	beta-BHC	490	U
319-86-8	delta-BHC	490	U
58-89-9	gamma-BHC (Lindane)	490	U
76-44-8	Heptachlor	490	U
309-00-2	Aldrin	490	U
1024-57-3	Heptachlor epoxide	110	DPJ
959-98-8	Endosulfan I	490	U
60-57-1	Dieldrin	330	DPJ
72-55-9	4,4'-DDE	220	DPJ
72-20-8	Endrin	950	U
33213-65-9	Endosulfan II	950	U
72-54-8	4,4'-DDD	950	U
1031-07-8	Endosulfan sulfate	950	U
50-29-3	4,4'-DDT	1100	D
72-43-5	Methoxychlor	4900	U
53494-70-5	Endrin ketone	950	U
7421-93-4	Endrin aldehyde	950	U
5103-71-9	alpha-Chlordane	400	DPJ
5103-74-2	gamma-Chlordane	270	DPJB
8001-35-2	Toxaphene	49000	U
12674-11-2	Aroclor-1016	9500	U
11104-28-2	Aroclor-1221	19000	U
11141-16-5	Aroclor-1232	9500	U
53469-21-9	Aroclor-1242	9500	U
12672-29-6	Aroclor-1248	9500	U
11097-69-1	Aroclor-1254	5300	DU
11096-82-5	Aroclor-1260	9500	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ88

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.25

Sample wt/vol: 31.0 (g/mL) G Lab File ID: _____

% Moisture: 31 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	24	U
319-85-7	beta-BHC	24	U
319-86-8	delta-BHC	24	U
58-89-9	gamma-BHC (Lindane)	24	U
76-44-8	Heptachlor	24	U
309-00-2	Aldrin	24	U
1024-57-3	Heptachlor epoxide	94	P
959-98-8	Endosulfan I	29	P
60-57-1	Dieldrin	260	P
72-55-9	4,4'-DDE	150	P
72-20-8	Endrin	89	
33213-65-9	Endosulfan II	55	P
72-54-8	4,4'-DDD	46	U
1031-07-8	Endosulfan sulfate	46	U
50-29-3	4,4'-DDT	710	P
72-43-5	Methoxychlor	240	U
53494-70-5	Endrin ketone	46	U
7421-93-4	Endrin aldehyde	57	P
5103-71-9	alpha-Chlordane	120	P
5103-74-2	gamma-Chlordane	120	PB
8001-35-2	Toxaphene	2400	U
12674-11-2	Aroclor-1016	460	U
11104-28-2	Aroclor-1221	940	U
11141-16-5	Aroclor-1232	460	U
53469-21-9	Aroclor-1242	460	U
12672-29-6	Aroclor-1248	460	U
11097-69-1	Aroclor-1254	3000	~~P~~ J
11096-82-5	Aroclor-1260	460	U

ONLY PCB DATA WERE VALIDATED

FORM I PEST

OLM03.0

DO NOT USE

1D
PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

BWZ88DL

Lab Name: SWL-TULSA Contract: 68-D5-0026

Lab Code: SWOK Case No.: 27133 SAS No.: SDG No.: BWZ67

Matrix: (soil/water) SOIL Lab Sample ID: 39129.25DL

Sample wt/vol: 31.0 (g/mL) G Lab File ID: _____

% Moisture: 31 decanted: (Y/N) N Date Received: 06/24/99

Extraction: (SepF/Cont/Sonc) SONC Date Extracted: 06/24/99

Concentrated Extract Volume: 5000(uL) Date Analyzed: 07/08/99

Injection Volume: 0.5(uL) Dilution Factor: 100.0

GPC Cleanup: (Y/N) Y pH: 5.2 Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	240	U
319-85-7	beta-BHC	240	U
319-86-8	delta-BHC	240	U
58-89-9	gamma-BHC (Lindane)	240	U
76-44-8	Heptachlor	240	U
309-00-2	Aldrin	240	U
1024-57-3	Heptachlor epoxide	120	DPJ
959-98-8	Endosulfan I	240	U
60-57-1	Dieldrin	360	DPJ
72-55-9	4,4'-DDE	280	DJ
72-20-8	Endrin	460	U
33213-65-9	Endosulfan II	460	U
72-54-8	4,4'-DDD	460	U
1031-07-8	Endosulfan sulfate	460	U
50-29-3	4,4'-DDT	1200	D
72-43-5	Methoxychlor	2400	U
53494-70-5	Endrin ketone	460	U
7421-93-4	Endrin aldehyde	460	U
5103-71-9	alpha-Chlordane	260	D
5103-74-2	gamma-Chlordane	120	DPJB
8001-35-2	Toxaphene	24000	U
12674-11-2	Aroclor-1016	4600	U
11104-28-2	Aroclor-1221	9400	U
11141-16-5	Aroclor-1232	4600	U
53469-21-9	Aroclor-1242	4600	U
12672-29-6	Aroclor-1248	4600	U
11097-69-1	Aroclor-1254	6300	D
11096-82-5	Aroclor-1260	4600	U

ONLY PCB DATA WERE VALIDATED